BILLINGS AREA

Wayfinding Signage Plan

FEBRUARY 2020

Acknowledgements

This plan was prepared for the Billings-Yellowstone County Metropolitan Planning Organization by Alta Planning + Design, with planning assistance from Steering Committee and local staff.

APPROVED SUBJECT TO THE FOLLOWING DISCLAIMER
BOARD OF COUNTY COMMISSIONERS
YELLOWSTONE COUNTY, MONTANA

Denis Pitman, Chair

Donald W. Jones, Member

John Ostlund, Member

Disclaimer:

This is a planning level document only; it is not intended to obligate or mandate development of a Wayfinding Signage Program or obligate any jurisdiction to implement any or the entire document. In addition, this document does not assume prioritization or commitment of any local funds unless authorized by local government agency.

Table of Contents

01 Introduction

Wayfinding is more than simply guiding an individual from A to B

The Importance of Wayfinding

Wayfinding can be defined as an information system that helps people orient themselves in a physical space and navigate from place to place. In the built environment, it typically takes the form of signage, maps, or environmental graphics - such as pavement markings - and is all around us, whether we consciously recognize it or not. But wayfinding is so much more than the strategic placement of messages in the built environment to guide an individual from A to B.

A cohesive, well-designed wayfinding system can create a recognizable identity for a given place or network and can significantly influence people's perceptions of the navigability and overall convenience of a place, thus increasing its use/visitorship. In the case of this plan, which focuses on pedestrian and bicycle wayfinding throughout the Billings area, wayfinding has the potential to a) get more people walking and bicycling, b) increase the safety of pedestrians and bicyclists, and c) normalize walking and bicycling as legitimate modes of transportation.

- **Encouraging people to consider more sustainable and healthy modes of transportation (getting more people to walk and bike):** For many people, the decision to walk or ride a bike is made difficult by a variety of perceived barriers. For instance, someone who is new, visiting, or otherwise unfamiliar with the bicycle network may not be aware of how connected it is (or that it even exists), and that it can be used to get to useful destinations. In addition to connectivity/feasibility, the perceived barrier of time and distance can discourage active transportation use. Wayfinding can bring to light network connectivity and proximity of destinations, helping to minimize the tendency to overestimate the amount of time it takes to travel by bicycle.
- **Increasing the safety of pedestrians and bicyclists:** Perceived safety is continually one of the primary factors in one's decision to travel by foot or bicycle. While signage, maps, and pavement markings should never replace the need for safe infrastructure (e.g. separated facilities, streets designed to manage speed, etc.), the thoughtful design and placement of wayfinding elements increases the visibility of vulnerable road users to those in motor vehicles and promotes a culture of intermodal awareness and cooperation.
- **Normalizing walking and bicycling as legitimate modes of transportation:** Because wayfinding elements can make walking and bicycling more visible to all road users, it communicates that active modes belong in and are an integral part of the overall transportation system. Furthermore, an intentional, region-wide wayfinding system is a visible investment that sends a message that the City or regional jurisdiction recognizes the importance and validity of walking and bicycling as modes of transportation - equal in legitimacy to driving a car or taking public transit.

It is important to remember that while wayfinding plays a significant role in promoting active transportation, as stated above, it should not be considered a replacement for safe infrastructure, and should only be implemented along corridors where appropriate pedestrian/bicycle accommodations are made.

BENEFITS OF WAYFINDING

- **Orients and guides locals and visitors from place to place with minimal stress**
- **Identifies best routes to destinations**
- **Creates a recognizable brand and identity for the jurisdiction and/or active transportation network**
- **Overcomes barriers to entry, such as negative perceptions of connectivity, safety, the time it takes to travel by bicycle, and overall convenience**
- **Improves safety by increasing the visibility of pedestrians and bicyclists and heightening the awareness of motor vehicle drivers**
- **Normalizes walking and bicycling as legitimate modes of transportation**

About This Plan

The Billings Wayfindining Signage Plan ultimately provides the Billings MPO and City of Billings with all the necessary guidelines and tools to program and install signage as soon as funding is secured. It was prepared using a process that included extensive input from the Steering Committee, which was made up of City/County staff and key stakeholder groups, including:

- **Montana Department of Transportation (MDT)**
- **MET Transit**
- **Public Works Engineering**
- **Downtown Billings Alliance**
- **Department of Parks, Recreation, and Public Lands**
- **Billings TrailNet**
- **Chamber of Commerce**
- **Healthy by Design**
- **Billings Bicycle/Pedestrian Committee**

The planning process consisted of five phases: initial outreach, assessment of existing wayfinding in Billings, destination identification, signage design, sign placement and programming, and developing design intent drawings and capital cost estimates. Each phased involved feedback from the Steering Committee.

INITIAL OUTREACH

In the beginning stages of the project, the Alta team met in person with the Steering Committee during a three-day, intensive workshop, to provide stakeholders with an overview of wayfinding best practices in order to establish a baseline understanding of effective wayfinding planning and design. Participants discussed the existing active transportation network, branding and navigational challenges, and the vision and goals for the wayfinding system.

EXISTING CONDITIONS ASSESSMENT

During this phase, Alta used available GIS data and related planning initiatives to understand the active transportation network and previous wayfinding or branding efforts. Additionally, an inventory of the various branding and wayfinding signage currently present in the Billings area was collected.

DESTINATION IDENTIFICATION

Fortunately, the City of Billings had already compiled an extensive database of destinations from previous mapping efforts. The planning team made a map of these destinations as a starting point for stakeholders to begin to identify and prioritize regional and local destinations and their importance in the wayfinding experience.

WAYFINDING SIGNAGE DESIGN

Working closely with the Steering Committee during the initial three-day workshop, Alta's planning and graphic design teams developed two concepts for the look and feel of wayfinding signage for Billings. In a group workshop and discussion, stakeholders gave input on visual preferences and feedback on the draft concepts, ultimately helping the team arrive at a preferred signage design concept.

SIGN PLACEMENT AND PROGRAMMING

To give Billings a head start in implementing the wayfinding principles outlined in this plan, select priority corridors were identified for which the planning team created sign placement maps and sign programming (i.e. sign copy to be printed on signs). For these corridors, the only remaining steps for implementation include securing funding and fabricating and installing the signs as specified. For future implementation beyond these priority corridors, the Wayfinding Best Practices chapter of this plan should be used as guidance.

DESIGN INTENT DRAWINGS AND COST ESTIMATES

To streamline implementation and construction bidding, design intent drawings for fabrication were developed, along with planning level capital cost estimates. These drawings specify dimensions, colors, text, and mounting methods.

The planning process culminates with this Wayfinding Signage Plan, compiling the above efforts into one set of deliverables that can be implemented whenever funds for installation are secured.

Vision and Goals

In 2017, the Billings MPO made an update to their Billings Area Bikeway and Trails Master Plan, which proposes an extensive network of comfortable, connected bicycle and pedestrian infrastructure, including on-street bikeways and off-street trails. Local government recognizes the importance of establishing a unified wayfinding system to enhance the growing active transportation network. In fact, in addition to this plan, the City concurrently worked with software developers to create an app that helps people explore Billings and track personal physical activity.

In the initial outreach phase, stakeholders were able to discuss together what they hope the project will accomplish when the system is implemented. Some intended outcomes of the Billings wayfinding signage system include:

- **Inspire confidence**
- **Promote trail etiquette**
- **Navigate gaps in active transportation network**
- **Raise awareness of the trail system**
- **Provide iconic, attractive signage**
- **Consolidate the variety of current signs/brands into a more cohesive system**
- **Find a way to integrate the mobile app into the physical signage**

02 Wayfinding Best Practices

A cohesive, attractive wayfinding system can greatly contribute to a place's legibility and identity

Wayfinding Principles

The built environment should be designed so that people can quickly orient themselves, recognize areas of different character, and intuitively locate and navigate to destinations. The degree to which a place accomplishes these things determines its legibility, or how easily both locals and visitors can understand where they are and where they're going. A cohesive, attractive wayfinding system can greatly contribute to a place's legibility and identity by better enabling individuals to:

- Easily and successfully find their destination
- Understand where they are with respect to other key locations
- Orient themselves in an appropriate direction with little misunderstanding or stress
- Discover new places and services

The following guiding principles, based on best practices from around North America, will help create an effective wayfinding system in the Billings region.

CONNECT PLACES

An effective wayfinding system should directly connect to places locals and visitors want to go and enable them to discover new destinations that can be reached by walking or bicycling. Wayfinding connects neighborhoods and provides navigational assistance to both local and regional destinations, and is an extension to the bicycling and walking network, providing a seamless travel experience for non-motorized users. Wayfinding provides benefits that go beyond physical signage. It can create a deeper connection to a place, cultivate a sense of pride by reflecting community values, and support local economic development by encouraging residents and visitors to use local services.

KEEP INFORMATION SIMPLE

Wayfinding should provide clear information in a logical succession, and not overburden users with excess information. Information should be presented in as clear and logical format as possible. Wayfinding signage should be both universal and usable for the widest possible demographic and with special consideration for those without high educational attainment, English language proficiency, or spatial reasoning skills. It is important to provide information in manageable amounts. Too much information can be difficult to process quickly; too little, and decision-making becomes impossible. Information should be provided in advance of where major changes in direction are required, repeated as necessary, and confirmed when the maneuver is complete.

MAINTAIN MOTION

Wayfinding information should be presented in a way that is quickly understood. Walking and bicycling require physical effort, and frequent stopping and starting to check directions may lead to frustration and discourage use. Wayfinding information that can be quickly and easily grasped contributes to a more enjoyable environment for walking and bicycling. Consistent, clear, and visible wayfinding

CONNECT PLACES

Facilitate travel between destinations and provide guidance to new destinations and transit.

KEEP INFORMATION SIMPLE

Present information simply, using clear fonts and simple designs, so that it can be understood quickly.

MAINTAIN MOTION

Be legible and visible for people moving so that they can read the signage without stopping.

BE PREDICTABLE

Standardize the placement and design of signs so that signage patterns become predictable.

PROMOTE ACTIVE TRAVEL

Encourage increased rates of active transportation by helping people to realize they can walk and roll to the places they want to go.

elements allow active transportation users to navigate while maintaining movement.

BE PREDICTABLE

Wayfinding should be predictable and consistent. When information is predictable, it can be recognized and quickly understood. Predictability should relate to all aspects of wayfinding placement and design (i.e., sign materials, dimensions, colors, forms, and placement). Design consistency also contributes to a continuity of experience as landscapes and context change along bicycling and walking routes. Once users trust that they will encounter consistent and predictable information, their level of comfort is raised and new journeys become easier to attempt and complete, thereby promoting an experience that is welcoming and friendly. Similarly, maps should employ consistent symbology, fonts, colors, and style.

PROMOTE ACTIVE TRAVEL

Wayfinding should encourage active transportation by creating an accessible, clear, and attractive system that is intuitive to navigate by walking and bicycling. Whether directed towards people walking and bicycling or indirectly seen by passing vehicles, the system should integrate into the cultural environment and should be easy to understand. An effective wayfinding system has the potential to validate walking and bicycling as viable transportation options by communicating network connectivity and addressing perceived barriers such as time and distance to destinations.

Wayfinding should also expand the awareness and use of bicycle and pedestrian facilities by the whole community. The installation of wayfinding has the potential to increase walking and bicycling on existing facilities with low levels of use. This is an efficient use of active transportation investments on infrastructure already in place. Wayfinding also helps expand the use of the existing transportation network without costly infrastructure improvements. In many cases, streets with low speeds and volumes may be good candidates for walking or cycling routes and simply need the installation of wayfinding to raise the awareness of these route options.

Wayfinding Elements

The goal of a wayfinding system is to simplify navigation in urban environments. This section describes the spectrum of elements that may be used in the Billings Wayfinding Signage Plan. These elements are listed below and outlined in further detail on subsequent pages.

ACCESS ELEMENTS

- Gateway monuments
- Information kiosks
- Secondary access signage

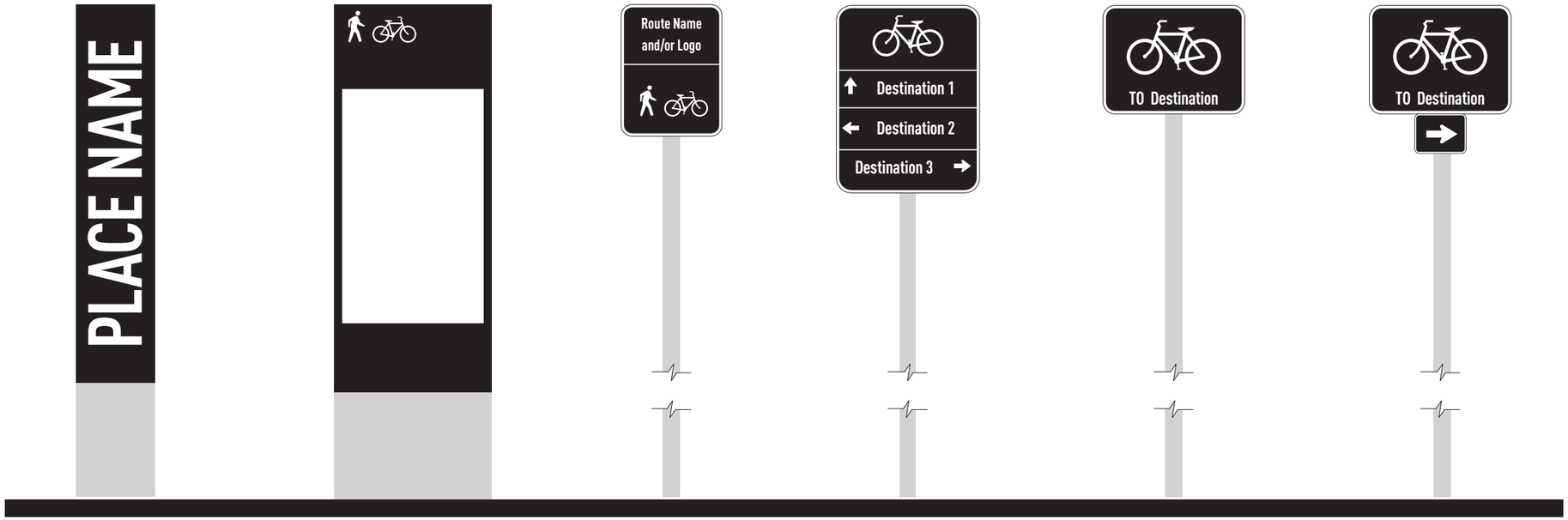
FUNDAMENTAL NAVIGATIONAL ELEMENTS

- Decision signs
- Confirmation signs
- Turn signs

ENHANCED NAVIGATIONAL ELEMENTS

- Pavement markings
- Mile markers
- Street/trail intersection signs
- Fingerboard signs

Figure 1. **Wayfinding Elements**



GATEWAY MONUMENT

Define the entry into a distinct neighborhood, or mark trailheads, access points, and landmarks. Opportunity for community-directed placemaking and integrated artwork.

INFORMATION KIOSK

Provide system map and navigational information; most effective when placed in plazas, rest areas, or other locations where users may congregate, rest, or enter a trail or path.

SECONDARY ACCESS

Mark entry to trails or paths at locations where limited user traffic may not necessitate as much information as information kiosks

DECISION

Clarify route options where two or more routes converge, or at complex intersections.

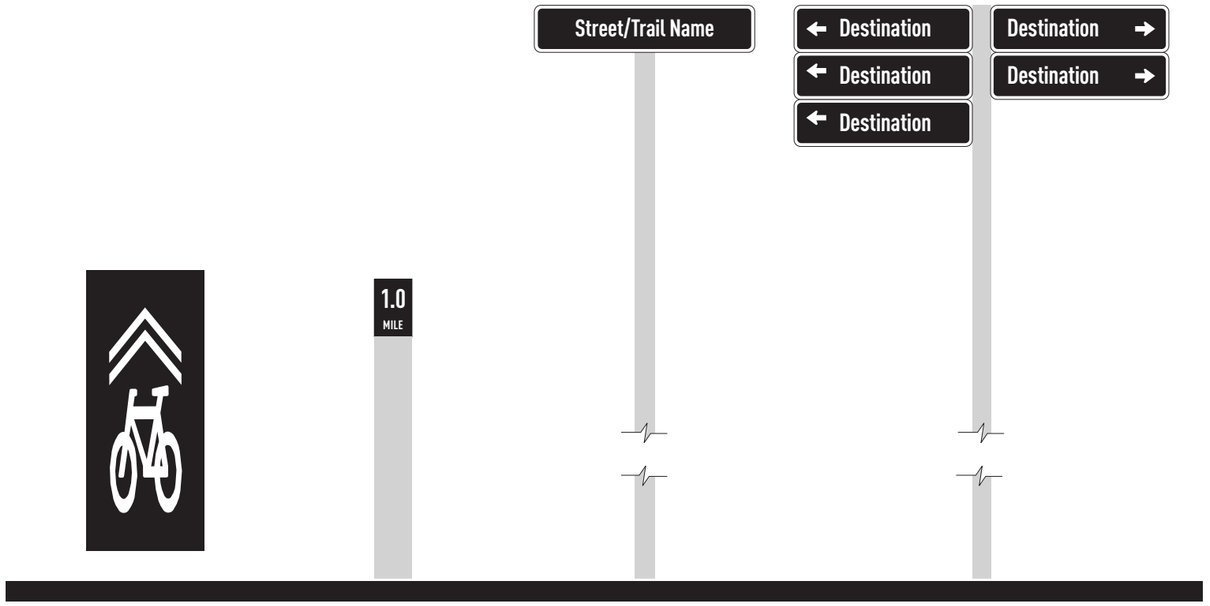
CONFIRMATION

Placed after a turn or intersection to reassure path users that they are on the correct route.

TURN

Placed before a turn or intersection to help users stay on the designated path.

ENHANCED NAVIGATIONAL ELEMENTS



PAVEMENT MARKER

Reinforce route direction, bicyclist positioning, intermodal cooperation, and/or system branding

MILE MARKER

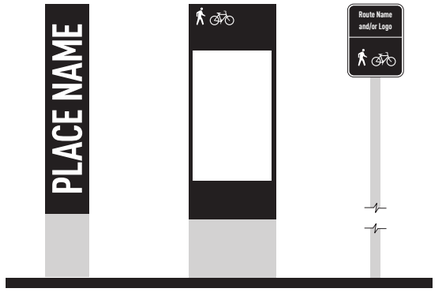
Reinforce system branding and orient users along off-street trails or paths

STREET/TRAIL INTERSECTION

Orient off-street trail users at street crossings and inform vehicular traffic of trail crossing

FINGERBOARD

Clarify route options where two or more routes converge, or at complex intersections.



Access Elements

Access elements guide users into the network served by the wayfinding system either by marking physical entry to trails, pathways, or other facilities, or by providing information to new or potential users in a clear and understandable way that encourages participation in active travel. The most common application of access elements is for off-street trails and paths, but are also effective in downtown areas or in conjunction with transit hubs, or other multimodal transfer locations. Access elements can include gateway monuments, information kiosks, and secondary access signage. Note that it may be possible to combine multiple access elements in some cases; or, for instance, kiosks may serve the purpose of gateway monuments, and vice versa.

GATEWAY MONUMENTS

Gateways define the entry into a distinct place with a defined identity. They are the first communication and introduction to a physical place, issuing a feeling of arrival. Gateways can be scaled for pedestrian and bicyclist experiences or vehicular experiences.

INFORMATION KIOSKS

Kiosks that include area or regional maps provide helpful navigational information, especially where users may be stopping long enough to digest more information (i.e., transit stations or stops, busy intersections, trailheads). Kiosks should be located in conspicuous areas along the primary route from parking areas to the trail. Sufficient space should be provided around the kiosk to allow people to observe the information without obstructing adjacent walkways and meet ADA clear zone requirements.

Typical elements to include on information kiosks are:

- City or regional map, including bicycle and pedestrian facilities, transit stations, bus stops, bike share or micromobility stations, and common destinations
- Community branding
- Regulations, etiquette, and safety information
- Trail name (if applied to a specific trail)

Additionally, per the Americans with Disabilities Act (ADA) standards, trailhead facilities built with federal funds shall include the following information:

- Length of the trail or trail segment
- Surface type/firmness/stability
- Typical and minimum width
- Typical and maximum running slope
- Typical and maximum cross slope

SECONDARY ACCESS SIGNAGE

Secondary access points with limited parking, services, or user traffic may not necessitate the same level of information and signage as formal access points with greater use. Signage at these locations may vary from a simple confirmation sign stating the name of the trail to a scaled down trailhead kiosk complete with user map, rules and regulations, permitted and restricted uses, and destination information.

Bold gateway elements give visitors a sense of arrival

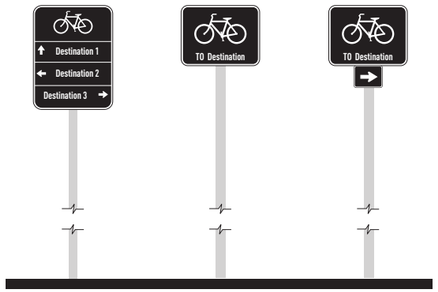
Trail gateway monument

Information kiosk

Secondary access signs can be simple, branded confirmation signs

Information kiosk

Secondary access signage (scaled down kiosk)



Fundamental Navigational Elements

Fundamental navigational elements are the foundation of a wayfinding system to guide bicyclists and pedestrians to their destinations along designated facilities. These fundamental elements as they pertain to on-street bicycling are found in the Manual of Uniform and Traffic Control Devices (MUTCD) (Section 9B.20) and include decision signs, confirmation signs, and turn signs. While MUTCD standards relate directly to on-street bicycle networks, the same sign types and design considerations apply to off-street shared use paths. Fundamental navigation elements for off-street facilities differ from on-street, MUTCD-regulated facilities in that they consider multiple modes beyond just bicycles (e.g. pedestrians, skateboards, scooters, etc.) and opportunities exist for more flexible sign design and branding.

DECISION SIGNS

Decision signs mark and are placed prior to the junction of two or more bikeways. These signs also inform users how to access nearby destinations. These signs include destinations that can be paired with distances in time and/or mileage, and arrows. Users can orient themselves within the bikeway system based on key destinations including culturally significant landmarks, shopping districts, and other recreational facilities. These signs provide direction and distance to key destinations.

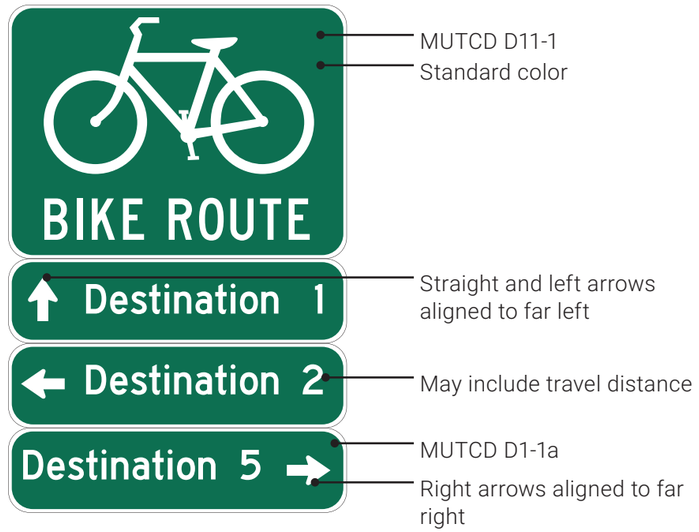
CHARACTERISTICS OF DECISION SIGNS

- Mark the junction of two or more bikeways
- Inform users of designated routes to access key destinations
- Provide direction and distance to destinations
- May include travel times to destinations

PLACEMENT CRITERIA FOR DECISION SIGNS

- For on-street applications, place 50-100 feet prior to a decision point; for off-street: 25-50 feet. These are adequate distances for bicyclists and pedestrians to see and respond to sign messaging. Exact distances will vary depending on context.
- Placed at key junctions alongside a bike route to indicate nearby destinations.
- Left turns for bicyclists require special consideration. The decision sign should be located within various distances before the intersection based on the number of lanes the bicyclist must merge across in order to make a legal left turn. The following distances should be used to allow adequate notification of left turns:
  - Zero lane merge: 50’
  - One lane merge: 100’
  - Two lane merge: 200’
- Signs should have a maximum of three destinations
- Signs should have a 2-foot minimum lateral offset of from edge of path or curb to edge of sign to prevent clipping from traffic.

Figure 2. **MUTCD standard decision sign**



CONFIRMATION SIGNS

Confirmation signs identify designated bike routes. This builds confidence that the user is on the correct path or route. In addition, these signs increase awareness of bicyclists by informing motorists of their presence. Confirmation signs are an integral component of any trail or bike system that crosses roads, changes direction, and has intermediate access points between trail or route beginning or end.

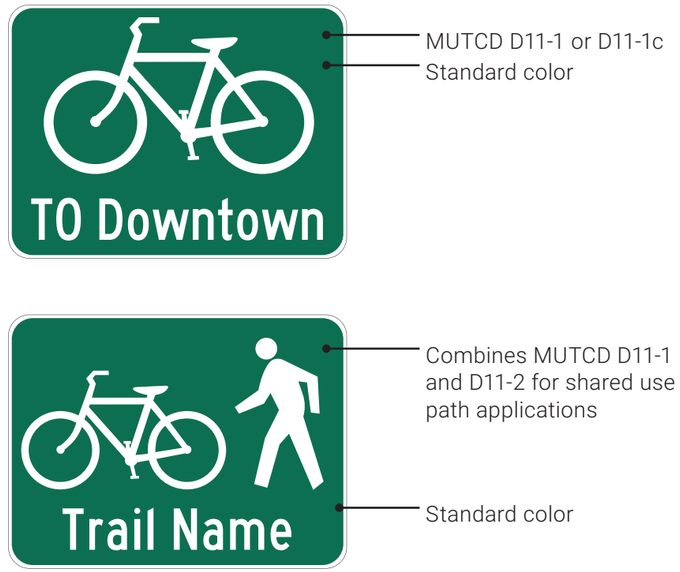
CHARACTERISTICS OF CONFIRMATION SIGNS

- Placed after access points along a trail or on-street bikeway, as well as after decision or turn signs
- Spaced periodically along a route or trail to maintain a consistent level of confidence that users are still traveling along the same route
- Do not indicate a change in direction
- May have informational or branding content such as the name of the route
- May include up to one directional destination (e.g. downtown)

PLACEMENT CRITERIA FOR CONFIRMATION SIGNS

- After decision signs and decision points
- Locations where a designated route is not linear as well as after complex intersections (e.g. intersections with more than four approaches, roundabouts, or indirect routing)
- Approximately every 1-2 miles on off-street facilities, unless another type of bicycle-specific sign (such as a turn, decision, mile marker, or other bicycle regulatory sign) or pavement marking is present within the 1-2 mile interval.
- Within 50-100 feet immediately following turns to confirm designated bicycle route.
- Signs should have a 2-foot minimum lateral offset from edge of path or curb to edge of sign to prevent clipping from traffic
- Mounting height should be a minimum of 7’ from the bottom of the sign to finished grade for on-street signs and a minimum of 4’ for signs along off-street facilities
- If the signed route is approaching a turn, turn signs or decision signs should be used instead of confirmation signs

Figure 3. **MUTCD standard confirmation signs**



TURN SIGNS

Turn signs indicate where a bikeway turns from one street onto another street, and only one route option is available. Turn signs are at key points of navigation for bikeway users. Turn signs direct the cyclist where to turn to remain on the designated route, allowing the cyclist to dedicate most of his or her attention to riding safely and responsibly.

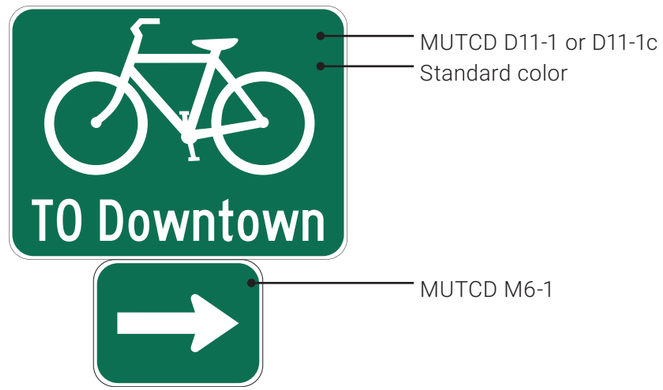
CHARACTERISTICS OF TURN SIGNS

- Clear direction for bicyclists and pedestrians to turn when a route transitions from one roadway or trail to another.
- May be a combination of a confirmation sign (MUTCD D11-1) and directional arrow (MUTCD M6-1) or a stand-alone decision plaque (MUTCD D1-1, D1-1b)
- May include travel distance to destination (MUTCD D1-1a, D1-1c)

PLACEMENT CRITERIA FOR TURN SIGNS

- The turn sign should be located in the block immediately preceding the turn.
- When a bikeway turns, a turn sign will be located at 50-100 feet (on-street) or 25-50 feet (off-street) in advance of the turn, or near side of the intersection).
- Left turns for bicyclists require special consideration. The turn sign should be located within various distances before the intersection based on the number of lanes the bicyclist must merge across in order to make a legal left turn. The following distances should be used to allow adequate notification of left turns:
  - Zero lane merge: 50’
  - One lane merge: 100’
  - Two lane merge: 200’
- Signs should have a 2-foot minimum lateral offset from edge of path or curb to edge of sign to prevent clipping from traffic.
- Mounting height should be a minimum of 7’ from the bottom of the sign to finished grade for on-street signs and a minimum of 4’ for signs along off-street facilities
- In locations where there are two or more bike routes, a decision sign, rather than two turn signs, should be used.

Figure 4. **MUTCD standard turn signs**



Conformance with MUTCD Standards

The Manual on Uniform Traffic Control Devices, or MUTCD, is a document issued by the Federal Highway Administration (FHWA) of United States Department of Transportation. The MUTCD specifies the standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel. The MUTCD was established in order to achieve uniformity and consistency in traffic control devices (wayfinding signage is considered a traffic control device) so that information would be readily recognized and understood by travelers.

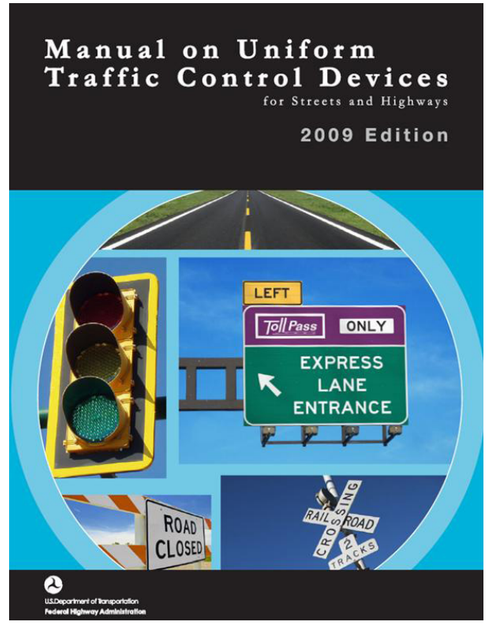
BICYCLE SIGN STANDARDS

The fundamental navigational elements in this plan, as well as pavement markings on public streets, are the only wayfinding elements whose standards are dictated by the MUTCD. Access elements, enhanced navigational elements, and interpretive elements allow for more flexibility and customization. However, trail and on-street wayfinding and signage elements that are not strictly compliant or not addressed by the MUTCD may be implemented at the local jurisdiction's discretion. In extreme circumstances state DOTs have required removal of non-compliant signage as a condition for federal funding. Coordination with MDT on flexible approaches to bikeway wayfinding is encouraged. Per the MUTCD, devices should be designed so that:

- Size, shape, color, composition, lighting or retro-reflection, and contrast are combined to draw attention to the devices; simplicity of message combine to produce a clear meaning
- Legibility and size combine with placement to permit adequate time for response
- Uniformity, size, legibility, and reasonableness of the message combine to command respect

The MUTCD also recommends the arrangement and amount of text, or legend, on each section of each sign:

- Guide signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions
- A straight ahead location should always be placed in the top slot followed by the destination to the left and then the right. If two destinations occur in the same direction, the closer destination should be listed first followed by the farther destination
- Arrows shall be depicted as shown in Figures 2 and 4 for glance recognition, meaning straight and left arrows are to be located to the left of the destination name, while an arrow indicating a destination to the right shall be placed to the right of the destination name. The approved arrow style must be used
- 19 characters (including spaces) in title case should be considered a maximum length for a single destination title. 10-14 characters (including spaces) in title case should be considered an ideal maximum length for a single destination title
- In situations where two destinations of equal significance and distance may be properly designated and the two destinations cannot appear on the same sign, the two names may be alternated on successive signs
- Approved fonts include the Federal Series (series B, C, or D), also known as Highway Gothic. Clearview is also currently approved for use.
- A contrast level of 70% needs to be achieved between foreground (text and graphics) and background



Cover of the Manual on Uniform Traffic Control Devices

FLEXIBILITY IN COMMUNITY WAYFINDING

Section 2D.50 (Community Wayfinding Signs) of the MUTCD recognizes the desire of some communities to incorporate supplemental information and/or community branding in addition to the minimum standards outlined for bicycle signs in Section 9B. The Community Wayfinding Sign standards allow for customization by permitting the use of enhancement markers, a common color other than the standard MUTCD green, and color coding of destinations.

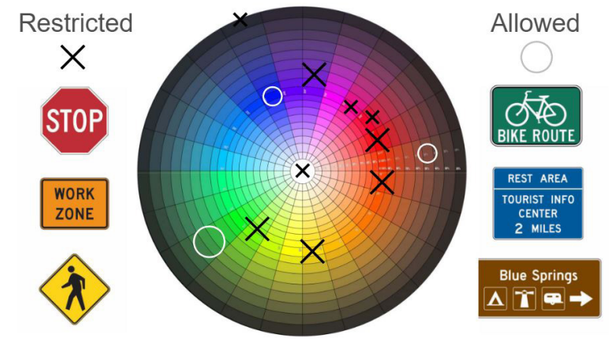
COLOR

Per the community wayfinding standards, color coding may be used on wayfinding guide signs to help users distinguish between multiple potentially confusing traffic generator destinations located in different neighborhoods or subareas within a community or area. Community wayfinding guide signs may use background colors other than green in order to provide a color identification for the wayfinding destinations by geographical area within the overall wayfinding guide signing system.

The MUTCD prohibits the use of some colors for wayfinding signs, these colors are known as “assigned colors”. The “assigned colors” consist of the standard colors of red, orange, yellow, purple, or the fluorescent versions thereof, fluorescent yellow-green, and fluorescent pink. They cannot be used as background colors for community wayfinding guide signs, in order to minimize possible confusion with critical, higher-priority regulatory and warning sign color meanings readily understood by road users.

The color wheel diagram in Figure 5 depicts colors which are already assigned specific meanings and thus shall not be used on community wayfinding signs. Green is the standard color for guide signs. Blue and brown are also used for traveler information including destination and street name signs. The remaining colors are eligible for use on community wayfinding signs as long as they are sufficiently different from the “assigned colors”.

Figure 5. **MUTCD color standards**



SUPPLEMENTAL INFORMATION

DISTANCE AND TIME

The addition of measuring distance in terms of miles and minutes has been employed by a number of cities in the United States and has been explicitly allowed by the Oregon state supplement to the MUTCD. Although this strategy is not explicitly permitted in Montana, adding distance in familiar units has been found to be an effective encouragement tool. For some, two miles may sound like a daunting distance to ride a bike, while twelve minutes sounds approachable. A pace of 10 miles per hour or 6 minutes per mile is the typical pace used for bicyclists, which is lower than typical bicycle design speed in order to best reflect and encourage the riding speed of the casual rider and to take into account traffic signals and other delays.

Decision sign with distance and time information (source: nacto.org)

Figure 6. **MUTCD compliance spectrum**

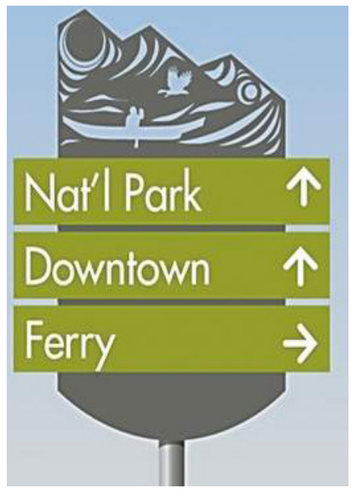
RIGID — FLEXIBLE

- MUTCD standard
- Information is clear and consistent
- No regional or local identity modifications
- Some variation in size and shape
- No encouragement information

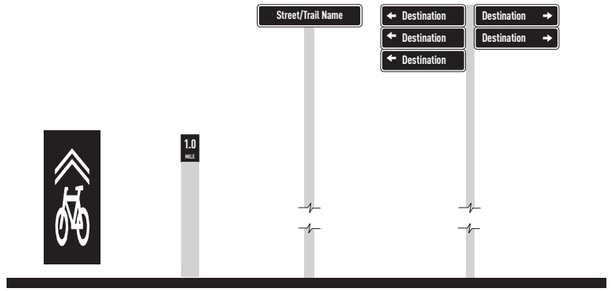
- Information consolidated into a single sign
- Variation in size and shape
- Travel times included

- Unique system or municipality identifiers or enhancement markers
- Custom color variations as allowed by MUTCD Community Wayfinding standards

- Custom sign post
- Variation in size and shape
- Decorative elements
- Arrows are not MUTCD standard



- Custom framing and support structures
- Unique sign shapes
- Non-standard colors and layout



Enhanced Navigational Elements

Enhanced navigational elements provide additional wayfinding assistance beyond fundamental signage, improving the user experience and providing more opportunities for system branding and identity. Enhanced navigational elements could include pavement markings, mile markers, street/trail intersection signs, and fingerboard signs.

PAVEMENT MARKINGS

For on-street bikeways, pavement markings typically function to position bicyclists in the proper lane location and communicate to motor vehicle drivers the presence of bicyclists. But pavement markings can also serve a variety of wayfinding purposes along on-street bikeways and trails. They can often be utilized to communicate direction, route name, community branding, mile markers, and street crossings. Pavement markings may be provided in lieu of, or in addition to standard signs, thus limiting sign clutter. Common materials used for pavement markings include pre-formed thermoplastic, paint, stamped concrete, or embedded metal.

SHARED LANE MARKINGS

Shared lane markings, or “sharrows”, are standardized in the MUTCD. In some places in the U.S., the chevrons at the top of shared lane markings are used to indicate the direction of intended travel. Although this practice is not approved by the FHWA or eligible for federal funding, many local transportation engineers are confident that the benefits of the turned, directional chevrons outweigh the risks. Portland, OR, for example, installs standards shared lane markings with federal funds, and then makes modifications later with local monies to add the directional wayfinding component.

MILE MARKERS

Mile markers are a series of numbered markers that may be placed alongside a trail at defined intervals to help users understand how far they have gone, and how far they have to go to their next destination. Furthermore, mile markers provide pathway managers and emergency response personnel points of reference to identify field issues such as maintenance needs or locations of emergency events. Mile marker locations should be geo-located and supplied to emergency responders so that responders can efficiently respond to incidents on the trail. System brand mark, path name, and distance information in miles may be included as well as jurisdiction identification. It is important that mile markers are spaced at consistent intervals, such as every 1/4 to 1/2 mile, along a pathway network. Point zero should begin at the southernmost and/or westernmost terminus points of a pathway. Mile markers on regional trails should be coordinated to continue across municipal boundaries when possible. Pavement marking mile markers can also be used in lieu of post-style mile markers.

STREET/TRAIL INTERSECTION SIGNS

There are several benefits to including signage at trail and street intersections. The primary reason is to orient the trail user to which street the user is crossing. Additionally, trail signage at these locations facing motorists (in addition to standard regulatory signage) can help bring attention to the trail crossing. Decision signage should be present if needed to communicate directions to destinations accessible from the cross-street. Street/trail intersection signage should also be included where trails cross over or under streets via grade-separated intersections. Riparian trails, rail trails, or other trails with infrequent connections to the street network make it difficult for trail users to orient themselves. Simple street signage on overcrossing or undercrossing structures can help trail users determine their location.

FINGERBOARD SIGNS

Fingerboard signs serve a purpose similar to decision signs in that they provide wayfinding to multiple destinations located in multiple directions from the junction at which the sign is located. They provide an efficient way to give direction at a junction that is approached from multiple angles, and are not as limited in the amount of destinations that can be included. Because they are not standard MUTCD wayfinding assemblies and can contain more than three destinations, fingerboards are better applied in pedestrian or off-street trail contexts where people have time and space to process more information.

Pavement marking / mile marker

Fingerboard sign

Motor vehicle-oriented signage indicating trail crossing

Modified shared lane marking to show direction

Mile marker

Trail/street undercrossing

Destination Selection & Programming

Following the principle of "connect places," this section describes an approach for selecting potential destinations to which people traveling along Billings' bicycle and pedestrian network may want to go. Wayfinding signs typically only allow for a limited number of destinations per sign. Thus, a consistent approach to selecting destinations for inclusion on wayfinding elements is necessary, given the multitude of potential destinations possible. Signs should follow the same approach throughout the Billings area so that the system is clear and predictable. Destinations and their names should be referred to consistently on all relevant wayfinding signs. As a general rule, only destinations that are open and accessible to the public should be signed.

DESTINATION HIERARCHY

Due to the number of destinations in the Billings region that are accessible by bicycle and walking, it is best to organize these destinations into a hierarchy. A hierarchy of destinations is necessary in order to determine which destinations to include when there are too many possible destinations. Such a hierarchy allows information to be layered through a series of decision points as a visitor enters the City and makes his or her way to destinations. The concept is simple—it is giving the right information at the right time.

Prioritizing and categorizing destinations into hierarchies also helps determine the physical distance from which the locations are signed. Note there is flexibility in these hierarchies as locations may not fit neatly into each.

PRIMARY DESTINATIONS

Destinations in this category are of primary importance and receive directional information to their locations on directional signs from a large radius throughout the City. They serve as "pull through" destinations because they draw visitors through the City from longer distances. These destinations serve a primary visitor function, such as a visitor center or convention center. Examples of destinations that fall into this category are downtowns, statewide or regional trails, districts (of regional significance), major and regional parks, arenas and stadiums, culturally significant landmarks, major institutions, universities, and other municipalities. To be categorized into this tier, a destination will meet two or more of the following criteria:

- Nationally recognized destination
- Governmental, historical, or cultural institution
- Not-for-profit or publicly-owned institution
- Includes a visitor information center or kiosk with personnel

SECONDARY DESTINATIONS

Destinations in this category are of major importance and receive directional information to their locations on signs from a smaller radius surrounding their locations. Typically this is limited to the decision points located closest to the point of interest. These are generally recognized destinations that have access to the bikeway or trail system nearby. Examples of destinations that fall into this category are transit stations, community parks, secondary schools, and neighborhood shopping districts. To be categorized into this tier, a destination will meet two or more of the following criteria:

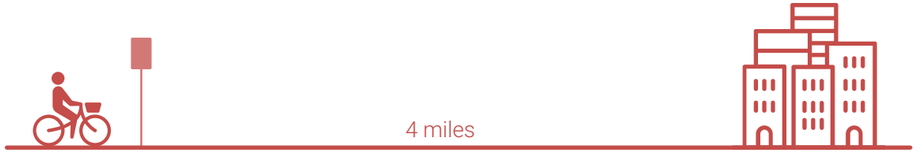
- Regionally recognized destination
- Open at least 40 hours per week
- Open at least 9 months out of the year

TERTIARY DESTINATIONS

Destinations in this category are minor, or exclusively civic destinations, and are primarily accessed by pedestrians, non-motorized vehicles or offer non-motorized activity such as trails, skate park, and water activities. These destinations are generally local attractions or activities such as community and recreation centers. To be categorized into this tier, a destination will meet one or both of the following criteria:

- Locally recognized destination
- Primarily accessed via non-motorized vehicle

Figure 7. **Destination hierarchy and signing distances**



SIGNING DISTANCES

Signing distances suggest the maximum distance that destinations should appear on directional signs. This process ensures that information is spread along the journey in manageable amounts according to users' immediate needs.

Distances may be measured either to a destination boundary or center, as long as the approach is consistent throughout the region. Cities typically have a well-defined edge and thus should be measured to boundary lines. Districts are less defined in terms of their boundaries and can be measured to their centers or widely recognized/perceived boundaries such as streets or landmarks. Parks, schools, are other specific destinations typically have a street address and thus distances should be measured to the main entrance of the specific location. If a destination is large or has several access points, distance should be measured to the point at which the bicyclist or pedestrian will most likely arrive.

PRIMARY DESTINATION SIGNING DISTANCE

Primary destinations provide navigational guidance to the widest spectrum of system users and thus should be prioritized on signs. In the case of Billings, primary destinations should appear on signs up to four miles away, but may be signed for distances longer than four miles if they have a strong regional pull.

SECONDARY DESTINATION SIGNING DISTANCE

Secondary destinations appeal to a broad spectrum of users and should be included on signs up to two miles away.

TERTIARY DESTINATION SIGNING DISTANCE

Tertiary destinations are typically places local or neighborhood interest and should be signed up to one mile away.

DESTINATION ORDER

Decision signs should be limited to no more than three lines of destinations, which include place names, route numbers, street names, and cardinal directions.

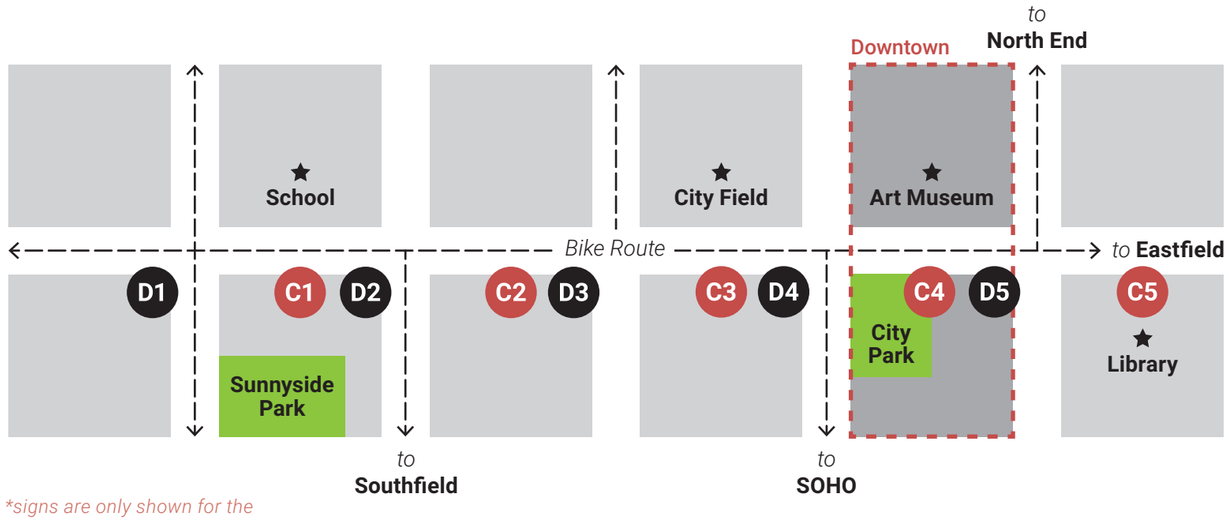
A straight-ahead location should always be placed in the top slot followed by the destination to the left and then the right, even if destinations to the right or left are closer. If two destinations occur in the same direction, the closer destination should be listed first followed by the farther destination.

Arrows should be placed for glance recognition, meaning straight and left arrows are located to the left of the destination name, while a right arrows are placed to the right of the destination name.

ABBREVIATIONS

When placing destination names on signs, names and routes should not exceed a maximum of 19 characters (including spaces and icons). When insufficient space is available for full wording, abbreviations may be used. Unless necessary to avoid confusion, periods, commas, apostrophes, question marks, ampersands, and other punctuation marks or characters that are not letters or numerals should be avoided.

Figure 8. **Process for destination programming and general sign placement**



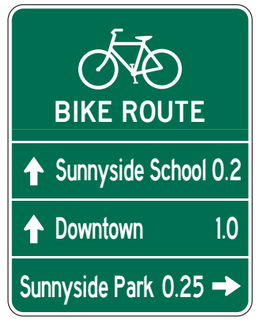
**signs are only shown for the eastbound direction along the primary route*

This diagram displays how destinations are applied to decision and confirmation signs along a hypothetical route.*

It displays how:

- Destinations are selected by distance and hierarchy
- How destinations are ordered according to direction and distance
- How destinations are added and removed from west to east

Decision Signs

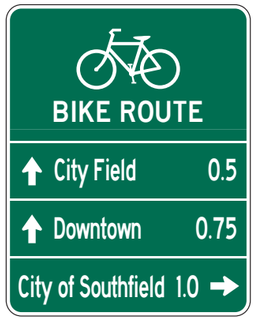


D1

Three miles west of Downtown, there are few Primary and Secondary destinations.

Due to this, two local (Tertiary) destinations appear on the sign.

Even though Downtown is a Primary destination, it is placed below Sunnyside School because the school is closer.



D2

Downtown is the pull through destination.

Sunnyside School and Park drop from the sign, because the bicyclist has past them.

City of Southfield (Primary) and City Field (Secondary) replace these destinations.

D3

Opportunity to go to City of Southfield has passed, so it is dropped and replaced by Art Museum

City Field, which is directly off the Bike Route, is signed to using a left arrow; moves to bottom as straight destinations are listed before left and right.

Downtown being the closest straight destination, moves to the top of the sign.

D4

Downtown remains on the sign, but no mileage is given since downtown is reached.

City Park (Secondary) is included on the sign, even though SOHO District (Primary) is within the signing threshold; This shows planner discretion in determining destinations.

The Art Museum remains.

D5

Since Downtown has been reached, Downtown is replaced by City of Eastfield as the pull through destination for the bike route.

Fewer destinations exist east of Downtown, so a Secondary (North End District) and a Tertiary (Eastside Library) make the sign.

Confirmation Signs

C1-C4

Downtown is the pull through destination, remaining on each sign until Downtown is reached.

C5

Eastfield replaces Downtown as the pull through destination.

Table 1. **MUTCD compliant abbreviations**

Message	Abbreviation
Alternate	ALT
Avenue	Ave, Av
Bicycle	BIKE
Boulevard	BLVD
Bridge	BR
Center (as part of a place name)	CTR
Circle	CIR
Court	CT
Crossing (other than highway)	X-ING
Drive	DR
East	E
Hospital	HOSP
Information	INFO
International	INTL
Junction / Intersection	JCT
Mile(s)	MI
Miles Per Hour	MPH
Minute(s)	MIN

Message	Abbreviation
Mount	MT
Mountain	MTN
National	NATL
North	N
Parkway	PKWY
Pedestrian	PED
Place	PL
Road	RD
South	S
Street	ST
Telephone	PHONE
Terrace	TER
Trail	TR
West	W

For a comprehensive list, standards, and guidelines for MUTCD compliant abbreviations, refer to MUTCD Section 1A.15 (Abbreviations Used on Traffic Control Devices)

ICONS AND SYMBOLS

Icons and symbols can be beneficial additions to a wayfinding signage design toolkit because they help to communicate information simply and expand comprehension beyond those with English language proficiency. Where proficiency is low, icons and symbols can substitute for words or concepts that are hard to explain or translate, like trailhead, transit, school, etc.

Universal symbology and iconography that have been developed by the American Institute of Graphic Arts (AIGA) and the National Park Service (NPS) are familiar to most people and translate across most languages and cultures. Use of symbols and icons on wayfinding signage, especially within names of destinations, can save space and improve legibility and comprehension.

Figure 9. **Examples of NPS icons and symbols**

General Placement Guidance

Consistent and appropriate placement of wayfinding elements helps to provide a legible wayfinding system while ensuring the signage elements do not create undue safety hazards. The Guide for the Development of Bicycle Facilities by the American Association of State Highway Transportation Officials (AASHTO) provides information on the physical infrastructure needed to support bicycling facilities. Most of this guidance applies to off-street, shared-use paths as well. The AASHTO Guide largely defers to Part 9 of the MUTCD for basic guidelines related to the design of wayfinding systems. Additional information provided by AASHTO regarding sign placement is as follows:

- Wayfinding guidance may be used to provide connectivity between two or more major facilities, such as a street with bike lanes and/or sidewalks and a shared-use path
- Wayfinding may be used to provide guidance and continuity in a gap between existing sections of a facility, such as a bike lane or shared-use path
- Road/path name signs should be placed at all path-roadway crossings to help users track their locations
- Reference location signs (mile markers) assist path users in estimating their progress, provide a means for identifying the location of emergency incidents, and are beneficial during maintenance activities
- On a shared-use path, obstacles, including signs, shall be placed no closer than 24" from the near edge of the travel way and no more than 6' away. For pole-mounted signs, the lowest edge of the sign shall be 4' above the existing ground plane

ACCESSIBILITY STANDARDS

As wayfinding systems often relate to accessible routes or pedestrian circulation, it is important to consider technical guidance from the Americans with Disabilities ACT (ADA) in order to implement wayfinding signs and other elements that do not impede travel or create unsafe situations for pedestrians, bicyclists, and/or those with disabilities. The Architectural and Transportation Barriers Compliance Board and the AASHTO Guide for the Development of Bicycle Facilities also provide guidance for safe and accessible design for the built environment. The following are standards that should be considered when designing and placing wayfinding signs.

VERTICAL CLEARANCE

On-Street: Vertical clearance shall be a minimum of 84" when adjacent to a sidewalk or on-street environment.

Off-Street: Vertical clearance shall be 96" high maximum (when overhanging the path), or 48" minimum from the grade of the path to the bottom of the sign and 24" from the edge of the path tread to the edge of the sign when the sign is mounted adjacent to the trail.

POST-MOUNTED OBJECTS

Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12", the lowest edge of such sign or obstruction shall be 27" minimum or 80" maximum above the finished floor or ground.

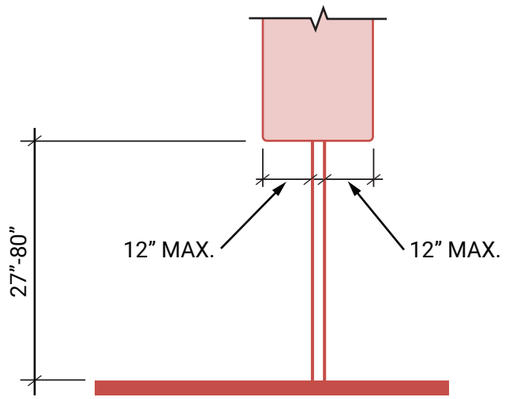
PROTRUDING OBJECTS

Objects with leading edges more than 27" and not more than 80" above the finished floor or ground shall protrude 4" maximum horizontally into the circulation path.

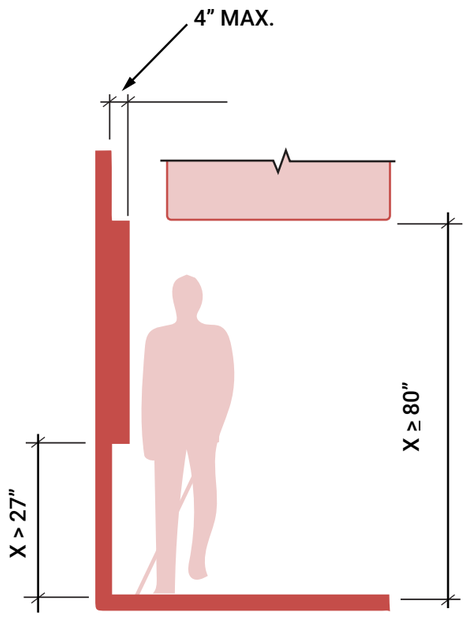
REQUIRED CLEAR WIDTH

Protruding objects may not, in any case, reduce the clear width required for accessible routes. Generally, this requirement is met by maintaining 4' minimum clear width for people maneuvering mobility devices. This requirement applies to sidewalks and other pedestrian circulation paths.

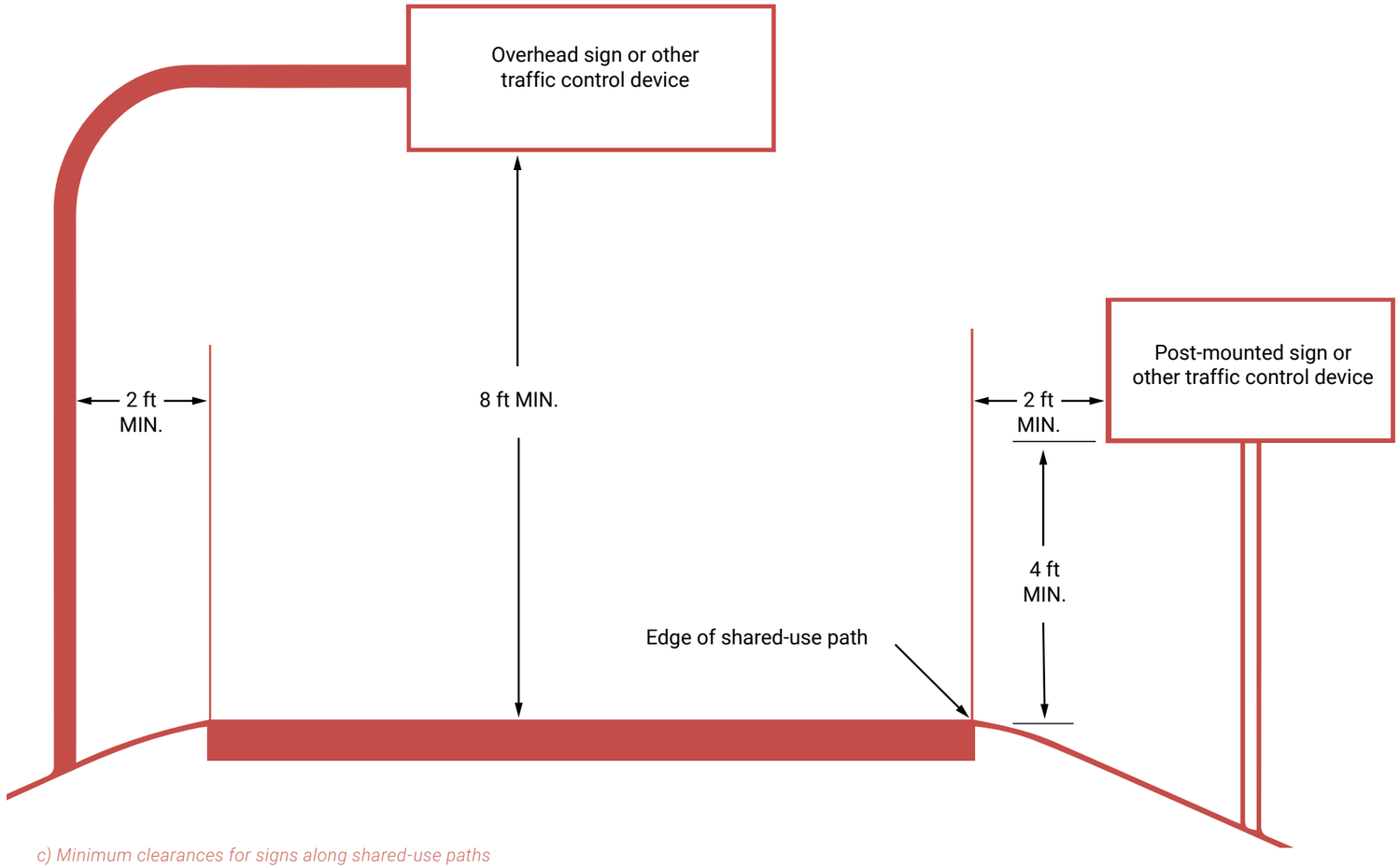
Figure 10. **AASHTO guidance for sign placement**



a) Minimum clearance for post-mounted objects

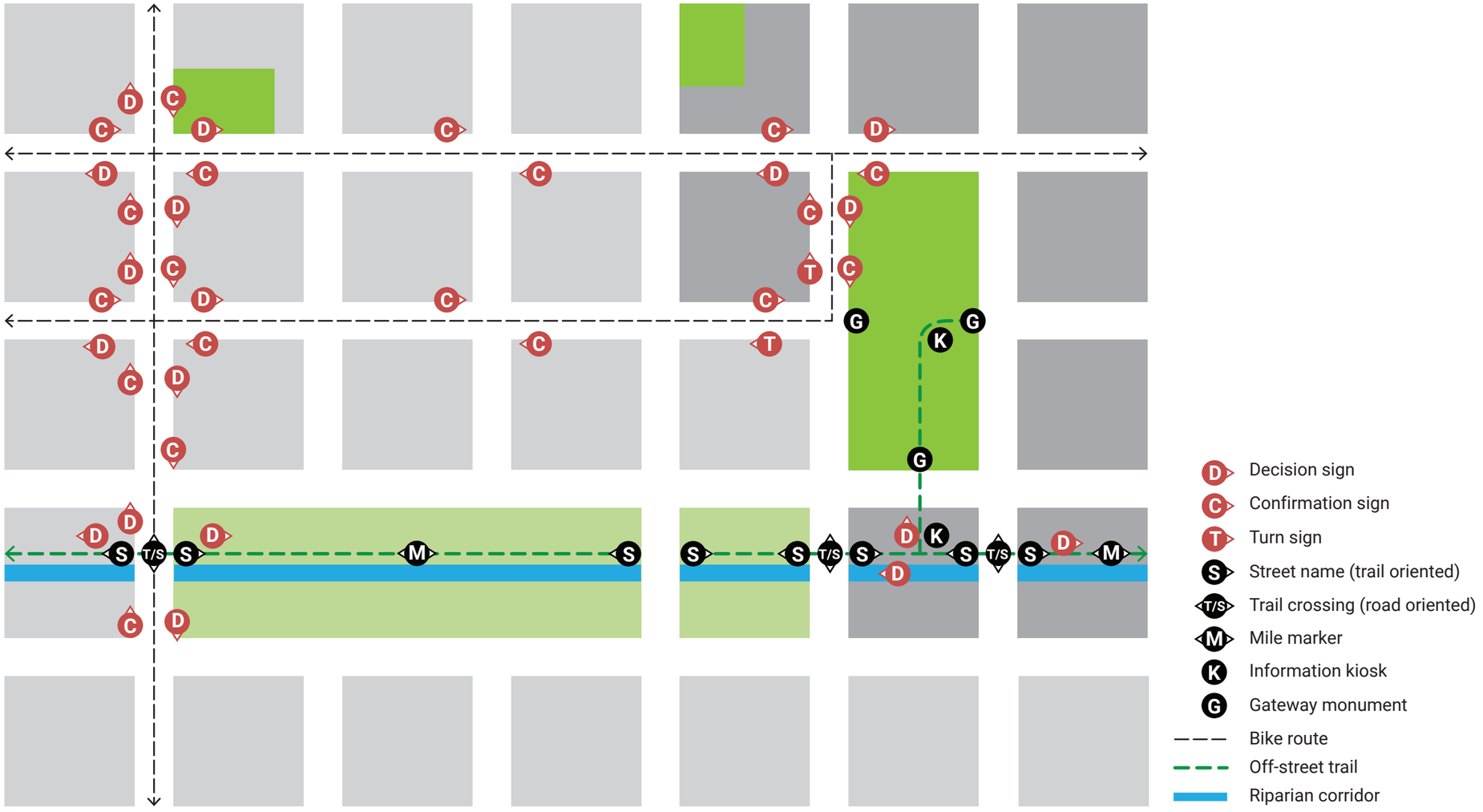


b) Minimum clearances for protruding objects



c) Minimum clearances for signs along shared-use paths

Figure 11. **General sign placement guidance**



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03 Existing Conditions

Existing Conditions

PREVIOUS PLANNING EFFORTS

Prior to the kickoff of the Billings Wayfinding Signage Plan, other planning efforts were made that directly influence the outcomes of this plan. In particular, the 2017 Billings Area Bikeway & Trails Master Plan and the 2011 Signage Framework Plan (developed for Billings Parks, Recreation, and Public Lands) were reviewed during the planning process.

BILLINGS AREA BIKEWAY & TRAILS MASTER PLAN

Recommendations from the Billings Area Bikeway & Trails Master Plan are largely focused on network connections and infrastructure types based on context and the goals established by the planning team to make the Billings area more walkable and bikeable for people of all ages and abilities. A portion of the plan, however, included general wayfinding recommendations. The Billings Wayfinding Signage Plan came about as a result from the 2017 master plan, which recommended a future wayfinding plan be established. The master plan also included a project prioritization methodology for determining which projects to implement in the near term. The 9th Ave N / Avenue C bicycle boulevard surfaced as a priority project and is included in the sign placement plans of this document.

SIGNAGE FRAMEWORK PLAN

In 2011, the Billings Parks, Recreation, and Public Lands division worked with consultants to develop a framework for future environmental graphic elements, including gateway signage, interpretive and educational signage, and directional signage for parks in the Billings area. The plan did not include guidance for on-street facilities. Recommendations were made for colors and materials, which were included in visual preference discussions for the Billings Wayfinding Signage Plan.

DESIGN CHALLENGES

Developing a region-wide wayfinding plan that achieves the vision and goals established by the Steering Committee presents a handful of challenges outlined below.

VARYING CONTEXTS

Billings' active transportation network spans varying contexts from urban to suburban to rural settings. As regulated by the Manual of Uniform Traffic Control Devices (MUTCD) and the Montana Department of Transportation (MDT), certain standards need to be met for on-street signage with regards to color, content, assembly, and mounting methods. Flexibility for branding and enhanced signage design is limited when compared to off-street signage. Given that reality and the desire to create a strong brand that carries throughout the entire system (on- and off-street), the planning team established that the wayfinding system must function and achieve a cohesive aesthetic across varying contexts.

AN EXPANDING NETWORK

Another challenge in the context of Billings when implementing a cohesive wayfinding system is the fact that the active transportation network is continually expanding

Wayfinding should function and achieve a cohesive look in both on-street and off-street contexts

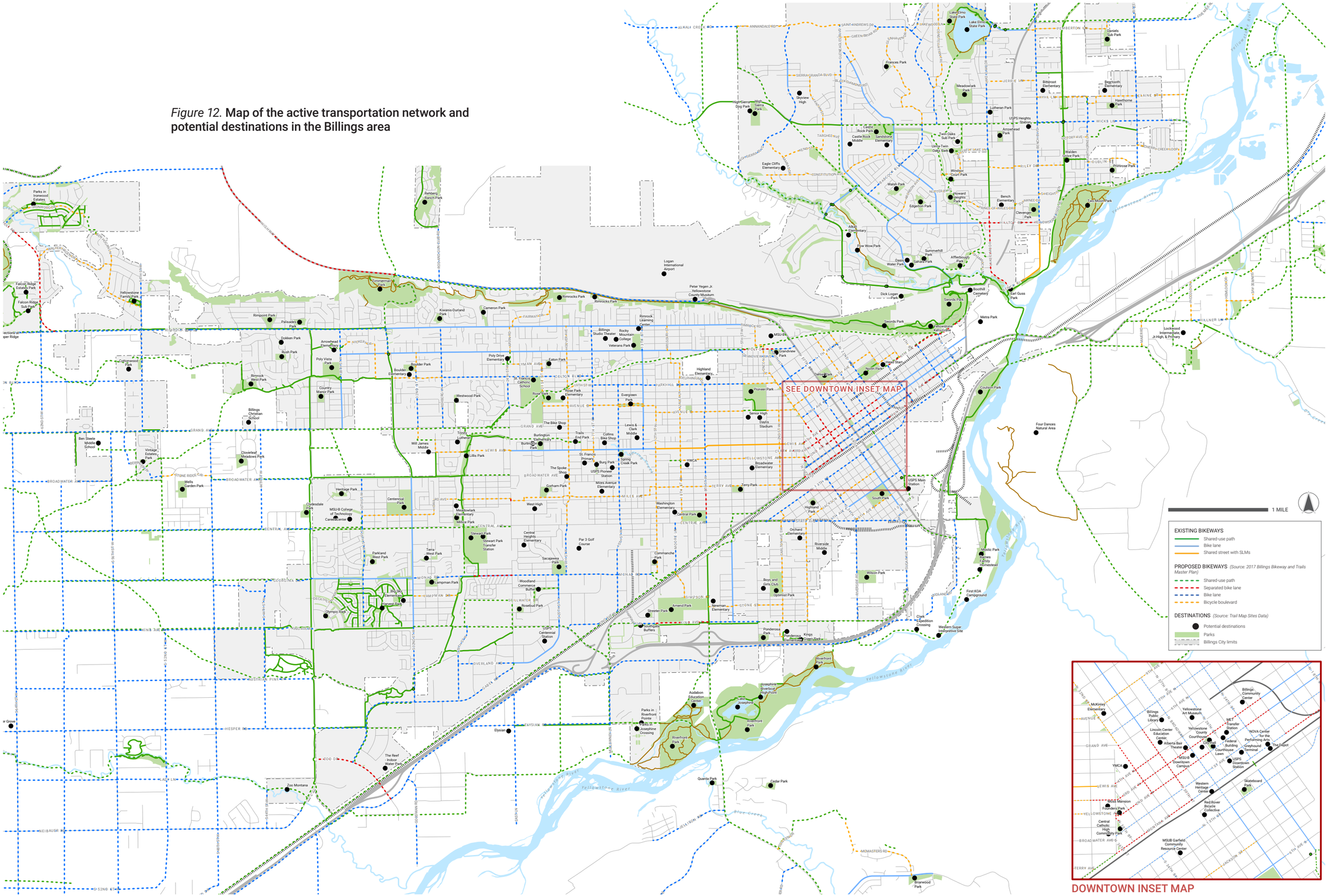
as new bikeways and trails are constructed based on the recommendations from the 2017 Billings Area Bikeway & Trails Master Plan. The map in Figure 12 illustrates the amount of proposed active transportation infrastructure to be implemented in the future. As new destinations become accessible via active transportation, existing signage will need to be updated to reflect new routes, and sound guidance for sign placement and programming in this plan is crucial for the success of the final product. Therefore, the wayfinding system and how it's implemented must have a certain degree of flexibility built in to adapt to the changing network.

NO ENCOMPASSING BRAND

One of the bigger challenges faced in this plan is the many entities at play and their competing brands. The City of Billings, Billings Chamber of Commerce, individual trails, Billings Parks, and other entities have been branded independent of one another, resulting in a wide variety of aesthetics. The proposed wayfinding system strives to achieve a cohesive look and feel while leaving room for customization and branding of individual entities.

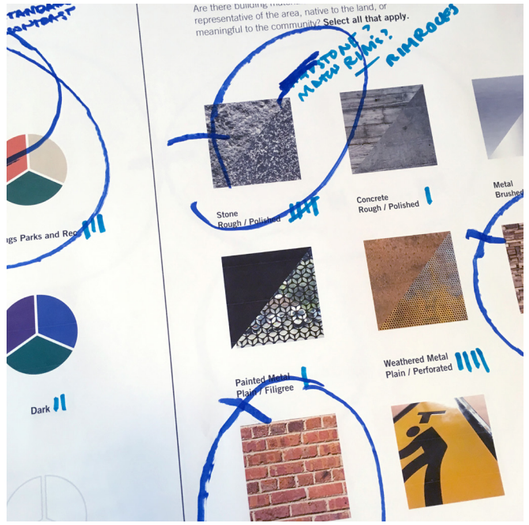
A variety of brands and aesthetics exist throughout Billings' parks, trails and streets

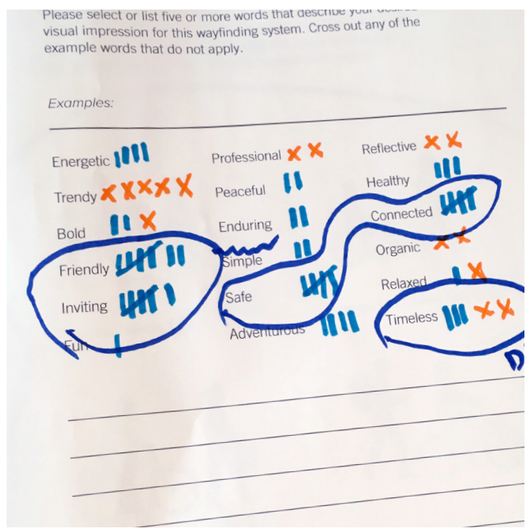
Figure 12. **Map of the active transportation network and potential destinations in the Billings area**



04 Stakeholder Involvement

Through team meetings and individual correspondence, key stakeholder groups collaborated to bring local knowledge from varying fields and interests to this plan.





Deep Dive Working Sessions

Early in the planning process, the planning team convened with Steering Committee members during a three-day, intensive workshop (Deep Dive) to establish project goals and desired outcomes, discuss signage design and preferred aesthetics through a visual preference survey, and to organize potential wayfinding destinations into tiers of regional significance. Alta team members used time between Steering Committee meetings to familiarize themselves with the local active transportation network, conduct one-on-one interviews with stakeholders, and flesh out concept designs for stakeholder feedback.

Stakeholders were again brought together midway through the project to give feedback on progress and discuss implementation strategies.

Visual Preference Summary

Emerging themes:

- The brand should strike a balance between historic and modern
- Consider accessibility for users of all ages and abilities; consider users with limited English language skills, and people with lower sight lines
- Prioritize / celebrate the natural setting over the “big city” context; trails are a refuge for many
- Natural colors and materials are preferred
- An iconic, memorable system is desired
- The wayfinding system should reference local history, materials, and existing brands, should have a sense of place, and “look like Billings”

Intended Audience

Kids and Families ●

People with Limited Mobility ◐

Commuters ●

Light or Moderate Exercisers ◐

Serious Athletes

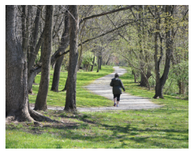
Out of Town Visitors ◐

Other

NOTES:

- I see them **all** every day
- The wayfinding system should serve many groups and abilities
- We want to make active transportation a “norm”

User Experience



Peace and Quiet ●

Vibrant and Urban

Adventure and Nature ◐

Family Fun

Point to Point Connectivity ◐

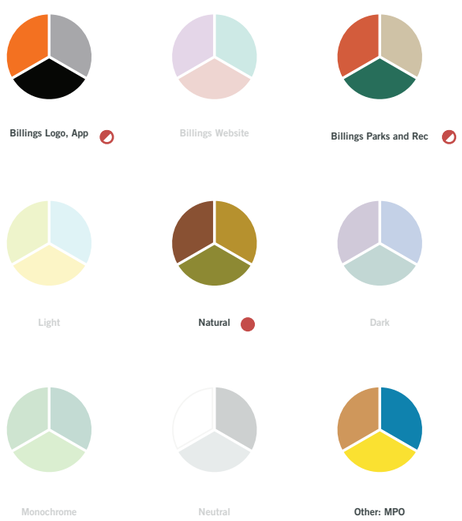
Other

NOTES:

- You’re not coming to Montana to experience the “big city”
- Focus on preserving and celebrating natural environment
- Improve / support the development of point-to-point connectivity and vibrant / urban experiences

Visual Preference Summary *cont'd*

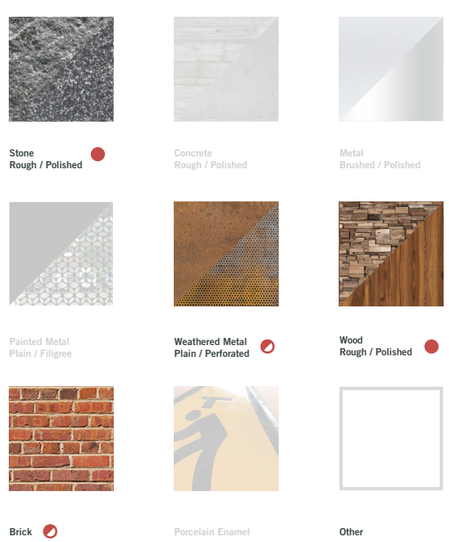
Color Palette



NOTES:

- Color should integrate with the app(s) (non-motorized transportation app colors are changing; transit app can change to match wayfinding colors)
- Colors should family with Parks and Rec, but not match
- MPO logo is a good starting place for colors

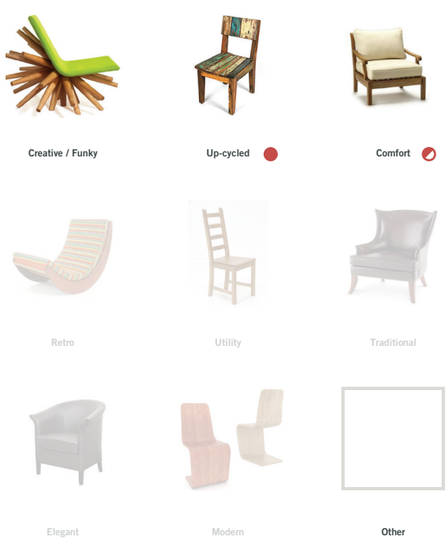
Material Selection



NOTES:

- Brick is used throughout downtown and is well liked
- Sandstone reflects the Rimrocks
- Natural, weathered materials strike the right note

Typology



NOTES:

- The wayfinding system should be unique
- It should be comfortable and accessible for locals as well as newcomers and visitors to the area
- It should have a sense of place

Visual Preference Summary *cont'd*

Character

Historic / Railroad

Rustic Modern

International

Industrial / Adaptive Reuse

Modern

Ranch

Eclectic

Prairie

Other

NOTES:

- A blend of historic and modern is preferred
- Historic references give the design a sense of place
- Eclectic / Modern / International styles are "too odd"

Precedent

Billings Heritage Trail App

Historic District Sign

ig Ditch Heritage Trail sign

Billings Logo

Billings Seal

27th Street District sign

Parks and Recreation sign

Other

NOTES:

- MPO logo is a good starting point for colors, ties to redesigned non-motorized transportation app
- Big Ditch Heritage trail sign is iconic, incorporates local materials and historic / modern aesthetic
- Don't want to "match" any of these, but should family with Parks and Rec, MPO

Themes

- **Friendly**
- **Inviting**
- **Safe**
- Connected
- Energetic
- Bold
- Adventurous
- Healthy
- Peaceful
- Enduring
- Simple

- Trendy
- Professional
- Organic

Destination ID Exercise

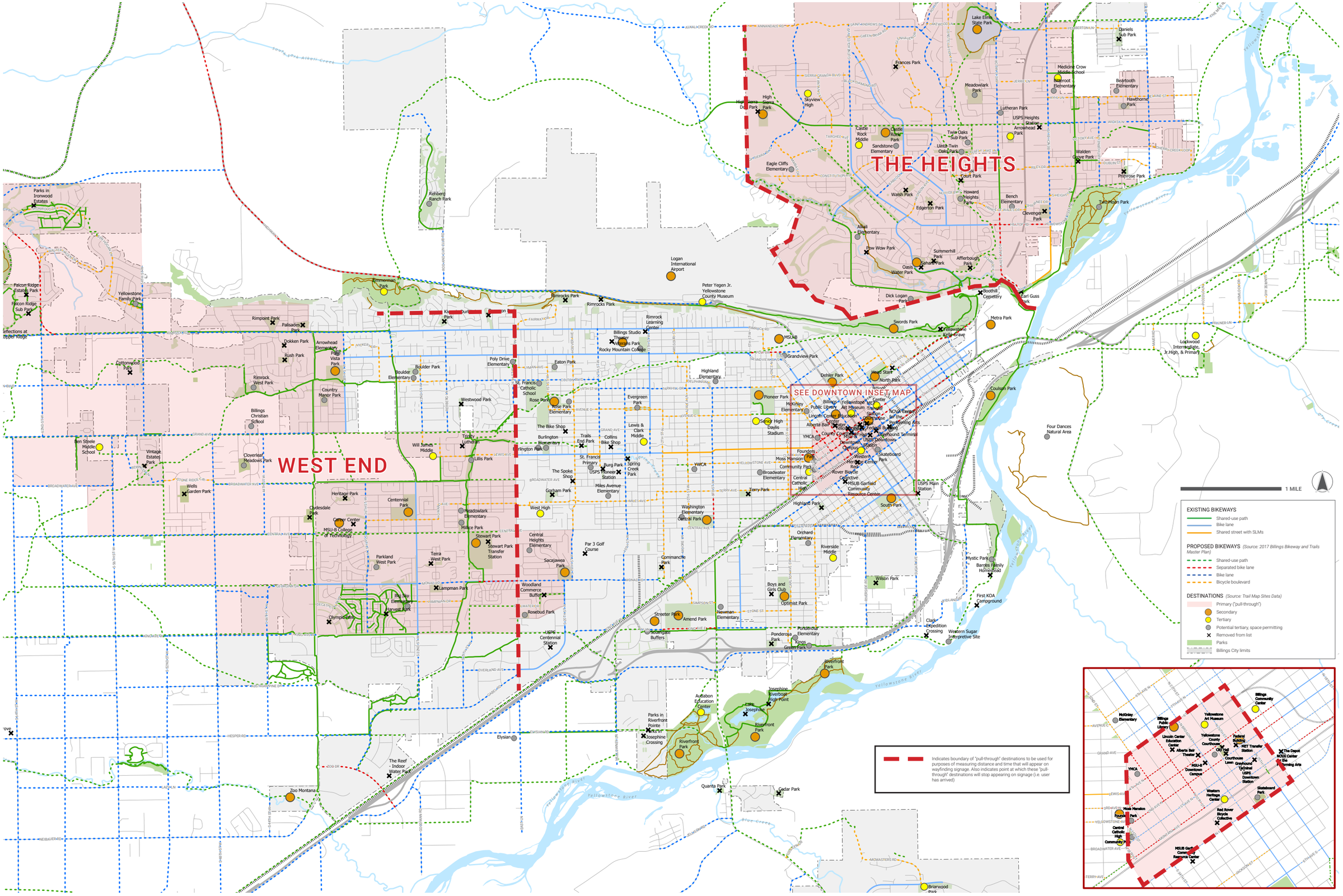
During the first Steering Committee meeting, stakeholders were presented with large maps of the existing active transportation network and asked to identify and categorize destinations based on regional significance. Included on the maps were point data such schools, parks, civic landmarks, and other destinations that could potentially be included in the wayfinding system. Using the guidance from the Destination Selection and Programming section of Chapter 2 (Wayfinding Best Practices), stakeholders identified destinations based on hierarchy (primary, secondary, or tertiary). This initial vetting of potential destinations was followed by further refinement and resulted in a final destination list to be included in sign programming efforts. These destinations are shown by hierarchy on the map opposite this page.

Due to the small- to medium-sized scale of the Billings area and in an effort to simplify the system for legibility and ease of use, primary destinations were limited to three districts: West End, Downtown, and The Heights. These destinations serve as “pull-through” landmarks that will help bikeway and trail users quickly orient themselves in the City by knowing the general direction in which they are traveling. As is the case with most urban districts or neighborhoods, the boundaries of these districts are not well-defined; therefore, stakeholders played a crucial role in identifying perceived boundaries to be used for the sake of wayfinding. That said, these boundaries are flexible and do not need to be strictly adhered to when programming signage.

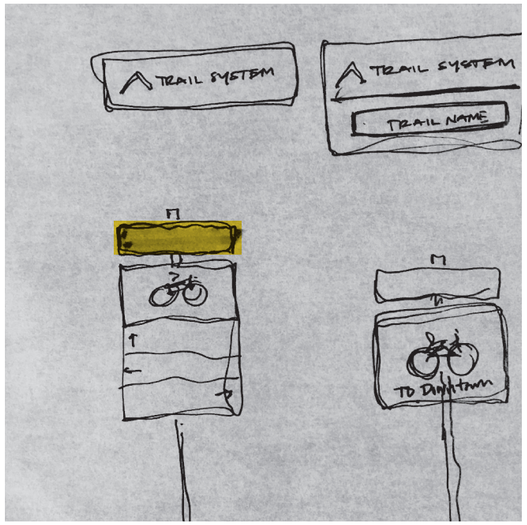
In addition to primary, secondary, and tertiary destinations, a fourth tier of destinations was designated for potential destinations of lower hierarchal value than tertiary, but that may be appropriate to sign to if no other competing destinations are nearby. This is most applicable to the outskirts of Billings where destination density is relatively low.

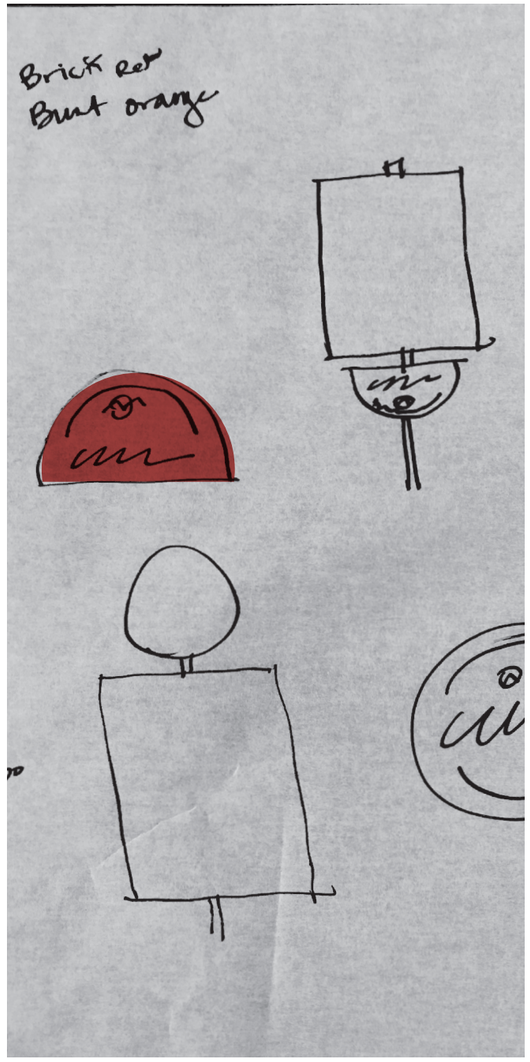
Downtown destinations were significantly simplified to include only two secondary destinations - Billings Public Library and MET Transfer Station - and three tertiary destinations - Yellowstone Art Museum, Western Heritage Center, and Billings Community Center. While several other notable destinations exist in the Downtown area, the density of destinations presents the potential to overcomplicate the wayfinding system and create unwanted sign clutter in an already visually stimulating environment. Thus, users will rely on the wayfidnding system to navigate to destinations of highest regional significance and rely on gateway and frontage signage to locate other destinations.

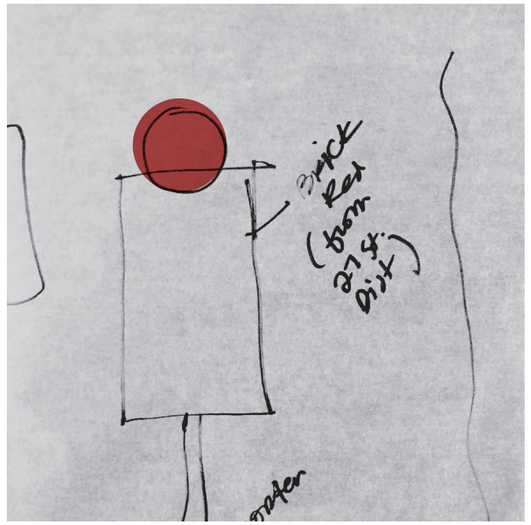
When programming signage and determining which destinations to include, judgements will have to be made on a case-by-case basis; however, the finalized destination list and map provides meaningful guidance to streamline the sign programming process.

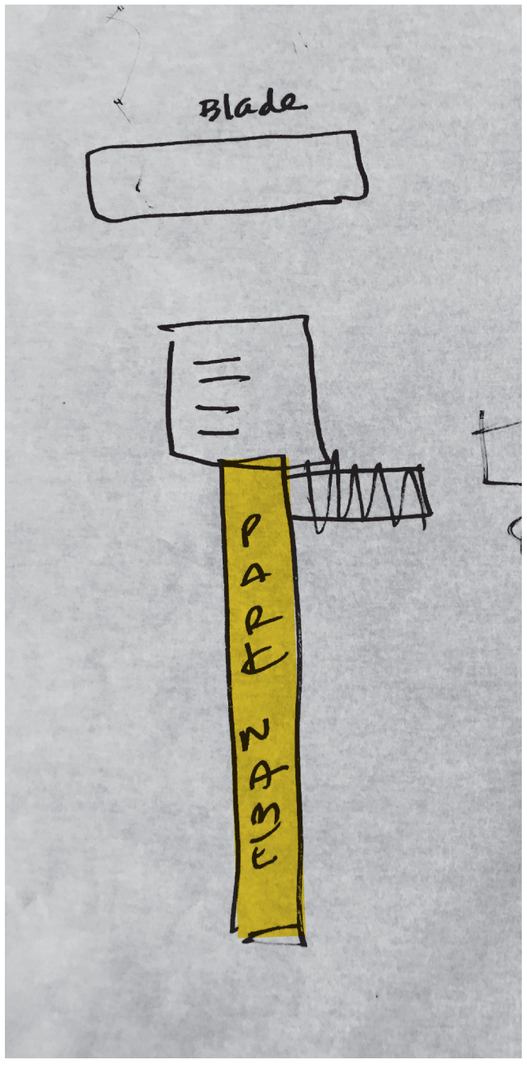

THE HEIGHTS
WEST END
SEE DOWNTOWN INSET MAP
Indicates boundary of "pull-through" destinations to be used for purposes of measuring distance and time that will appear on wayfinding signage. Also indicates point at which these "pull-through" destinations will stop appearing on signage (i.e. user has arrived)
1 MILE
EXISTING BIKEWAYS
Shared-use path
Bike lane
Shared street with SLMs
PROPOSED BIKEWAYS (Source: 2017 Billings Bikeway and Trails Master Plan)
Shared-use path
Separated bike lane
Bike lane
Bicycle boulevard
DESTINATIONS (Source: Trail Map Sites Data)
Primary ("pull-through")
Secondary
Tertiary
Potential tertiary, space permitting
Removed from list
Parks
Billings City limits

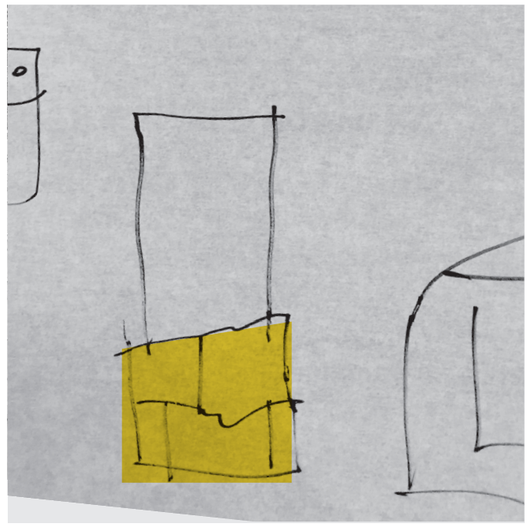
05 Design Concept Development

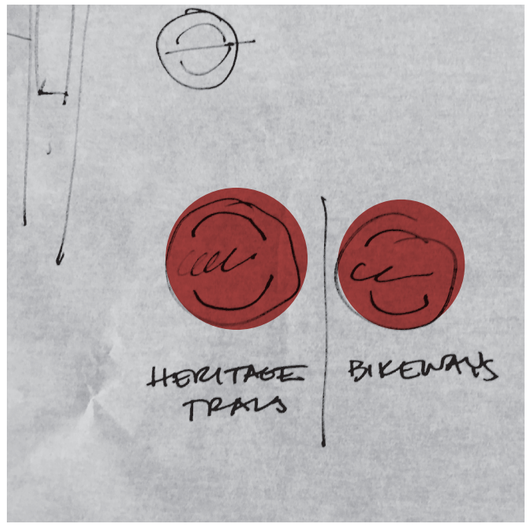


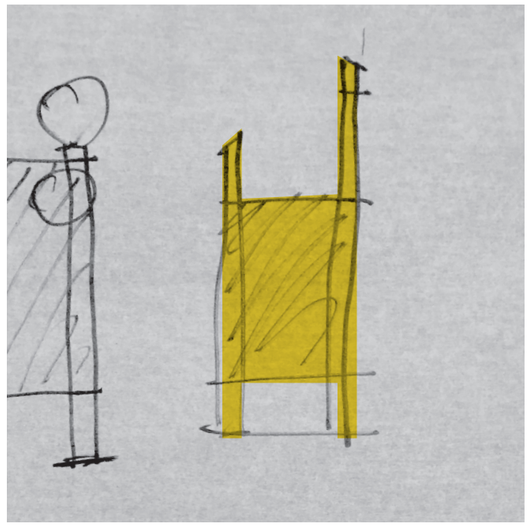












Sign Concepts

The visual preference survey, along with Alta's observations and field work, informed the look and feel of the draft sign concepts. Two draft concepts were presented to the Steering Committee for discussion, then refined to one preferred design based on the feedback and guidance of the Steering Committee.

01
MODERN RUSTIC

MATERIALS
Weathered metal / brick red, black painted metal, sandstone

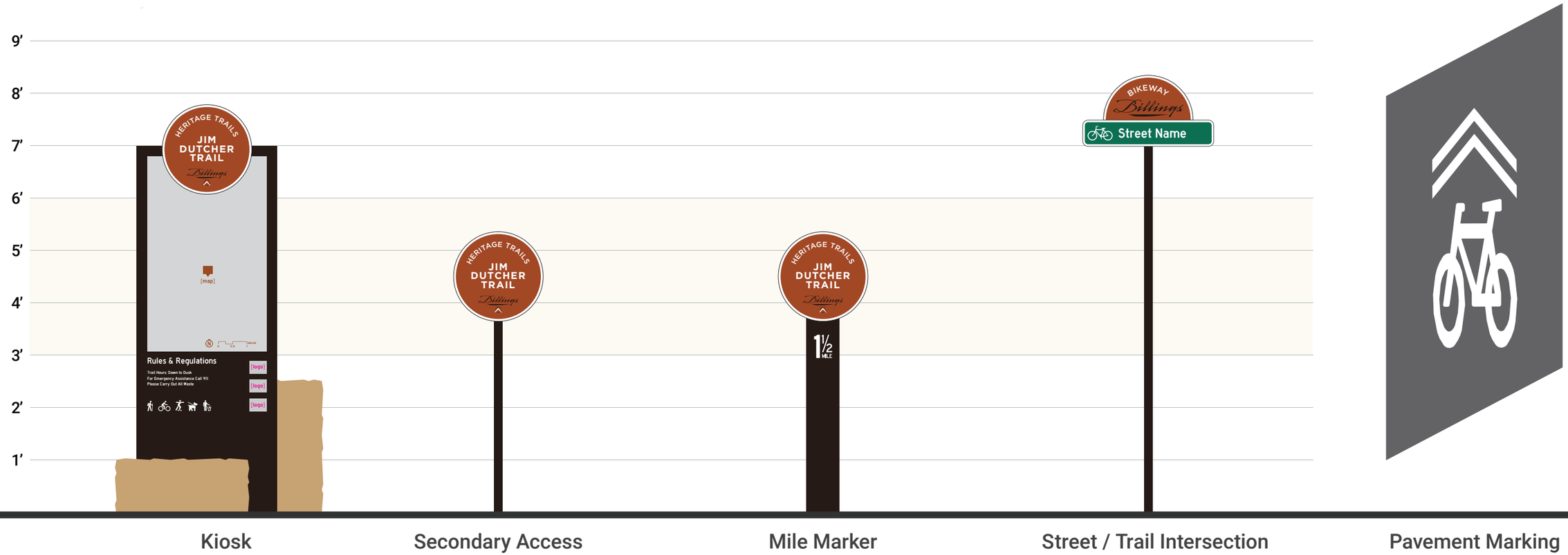
USER EXPERIENCE
Peace and quiet

CHARACTER
Modern Rustic

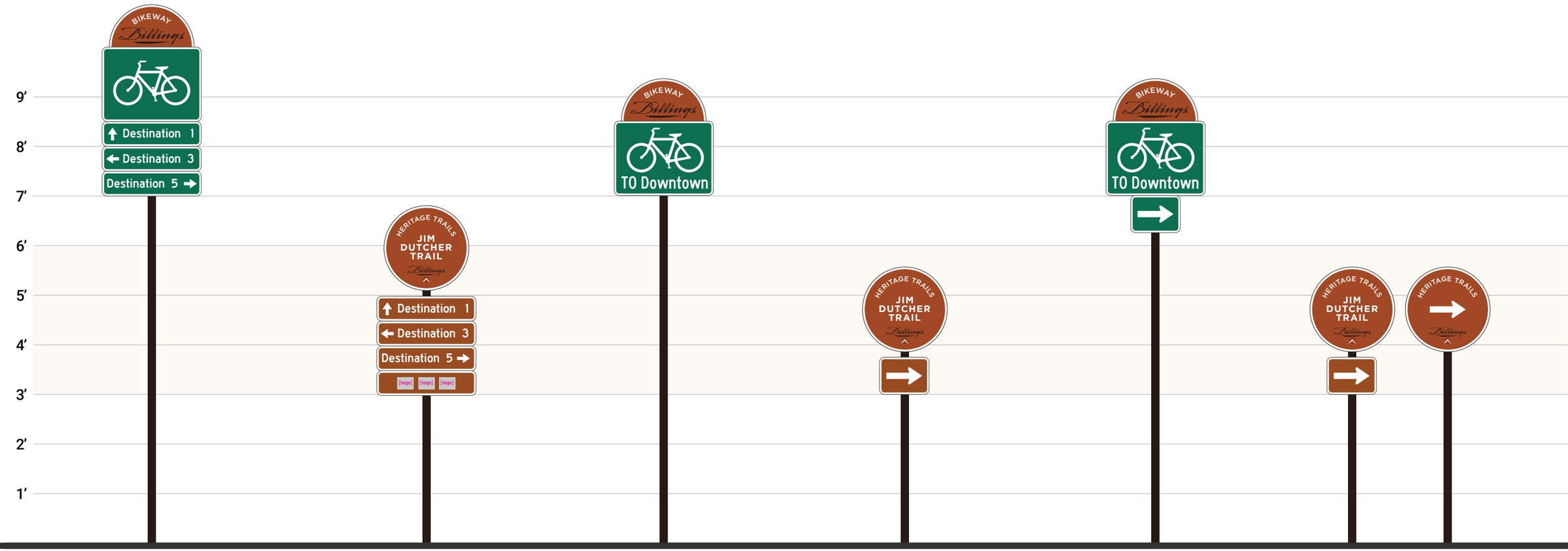
BRANDING INSPIRATION
Heritage Trails, AECOM Parks and Recreation Signage Framework Plan

ACCESS ELEMENTS

ENHANCED NAVIGATIONAL ELEMENTS



FUNDAMENTAL NAVIGATIONAL ELEMENTS



Decision

On Street *Off Street*

Confirmation

On Street *Off Street*

Turn

On Street *Off Street*

02
WARM WELCOME

MATERIALS

Painted metal

USER EXPERIENCE

Vibrant / Family fun

THEMES

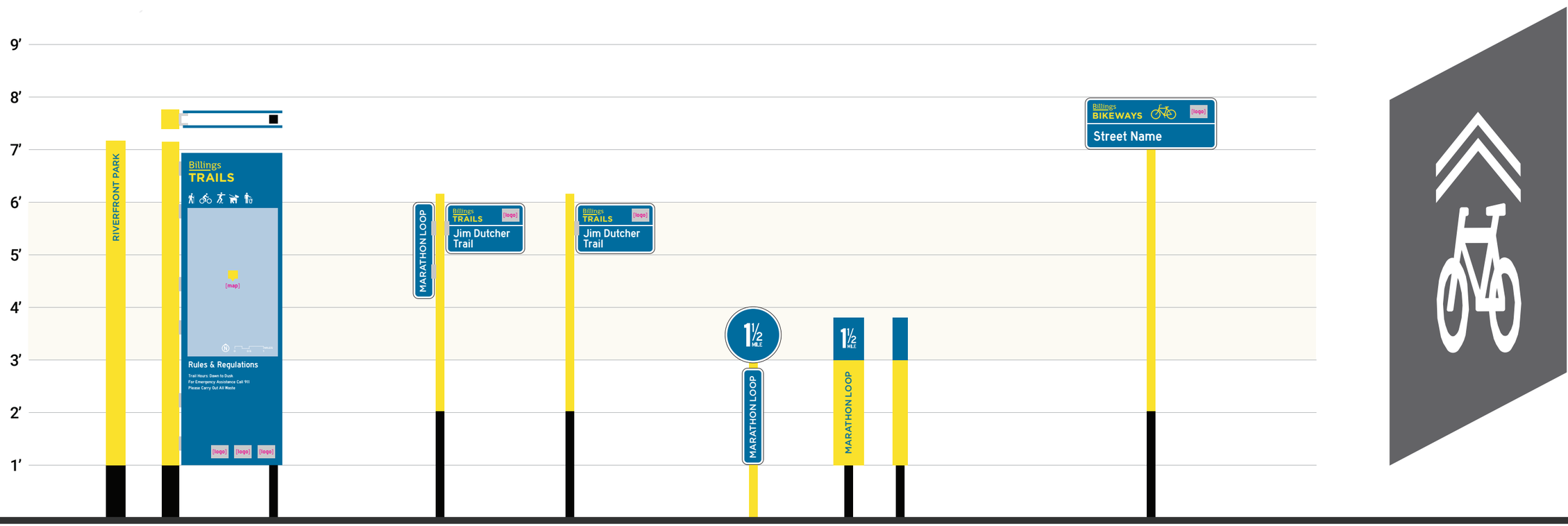
Friendly, inviting, bold

BRANDING INSPIRATION

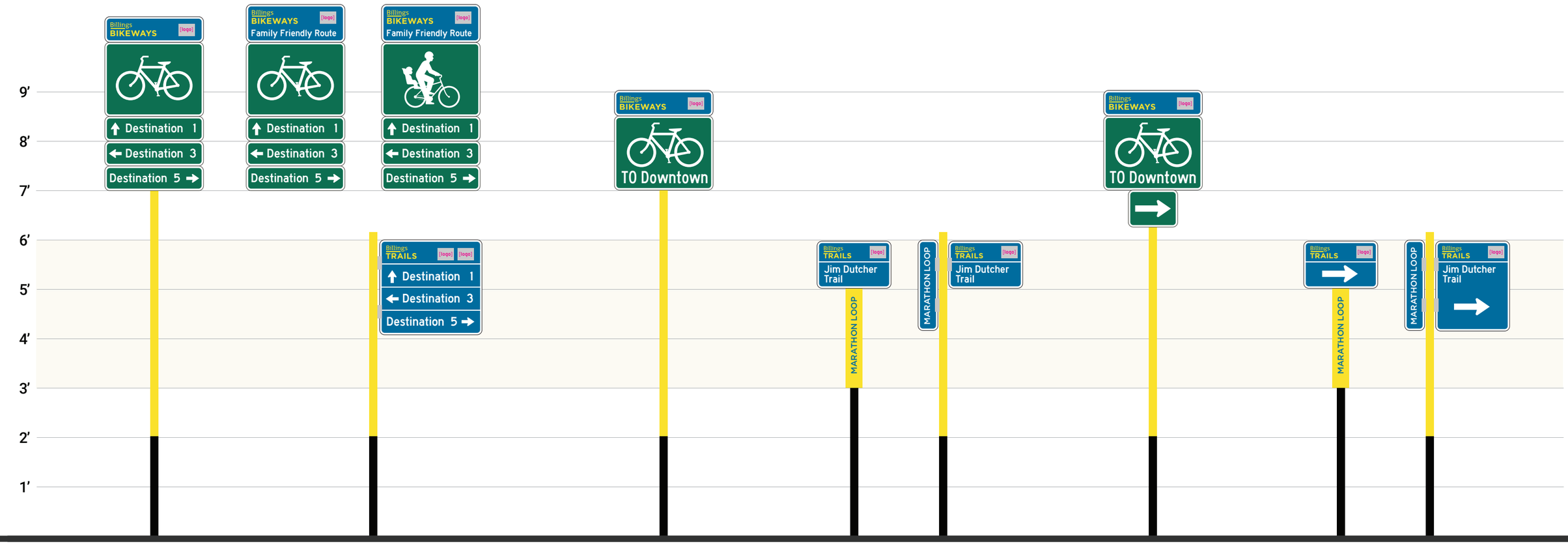
Billings • Yellowstone County MPO, Non-motorized Transportation app

ACCESS ELEMENTS

ENHANCED NAVIGATIONAL ELEMENTS



FUNDAMENTAL NAVIGATIONAL ELEMENTS



Decision

On Street *Off Street*

Confirmation

On Street *Off Street*

Turn

On Street *Off Street*

Preferred Concept

During a Steering Committee working session, stakeholders were able to give feedback on the two concepts that were presented and together discuss aesthetics, functionality, practical issues, and trade-offs of both. The group discussion led to a general preference for the Modern Rustic concept, but stakeholders agreed that bringing in highlights of the brighter colors in concept two would improve the final concept. This section presents the preferred color palette and design concept with specific notes for each element.

Color Palette

Brick, saddle, sunset

Sky

Scrub, shade, grass, sandstone

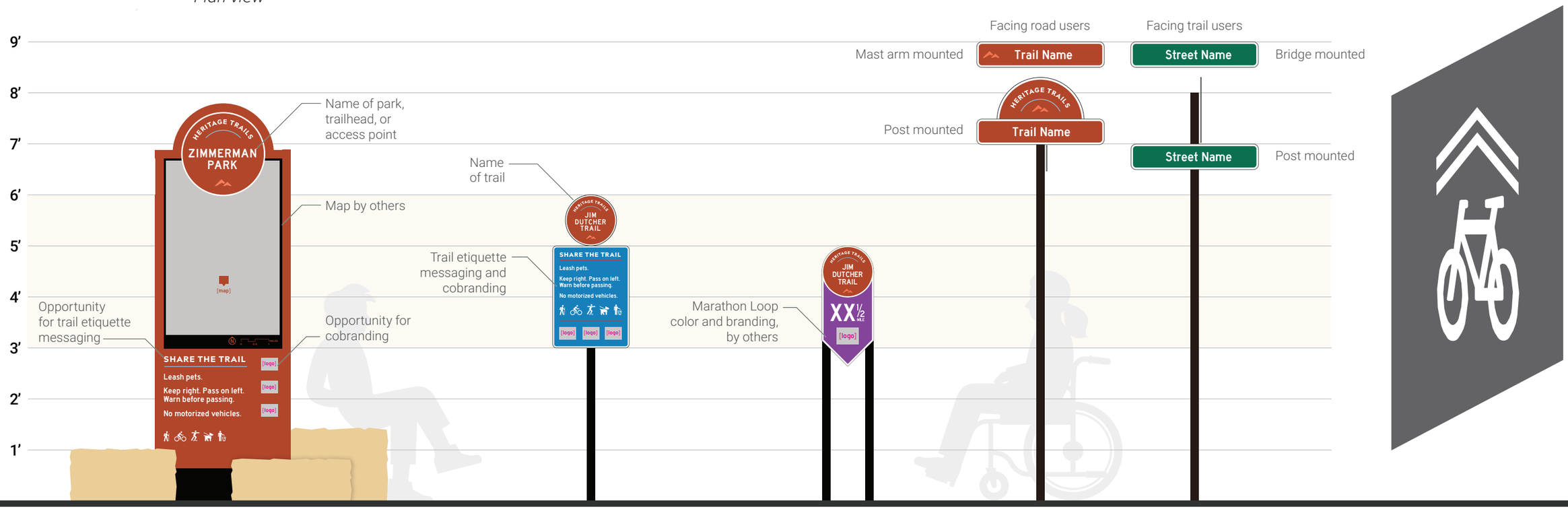
Wayfinding Concept: Modern Rustic

ACCESS ELEMENTS

ENHANCED NAVIGATIONAL ELEMENTS

Optional sandstone pedestal enhances the sense of arrival; provides seating

Plan view



Kiosk

Secondary Access

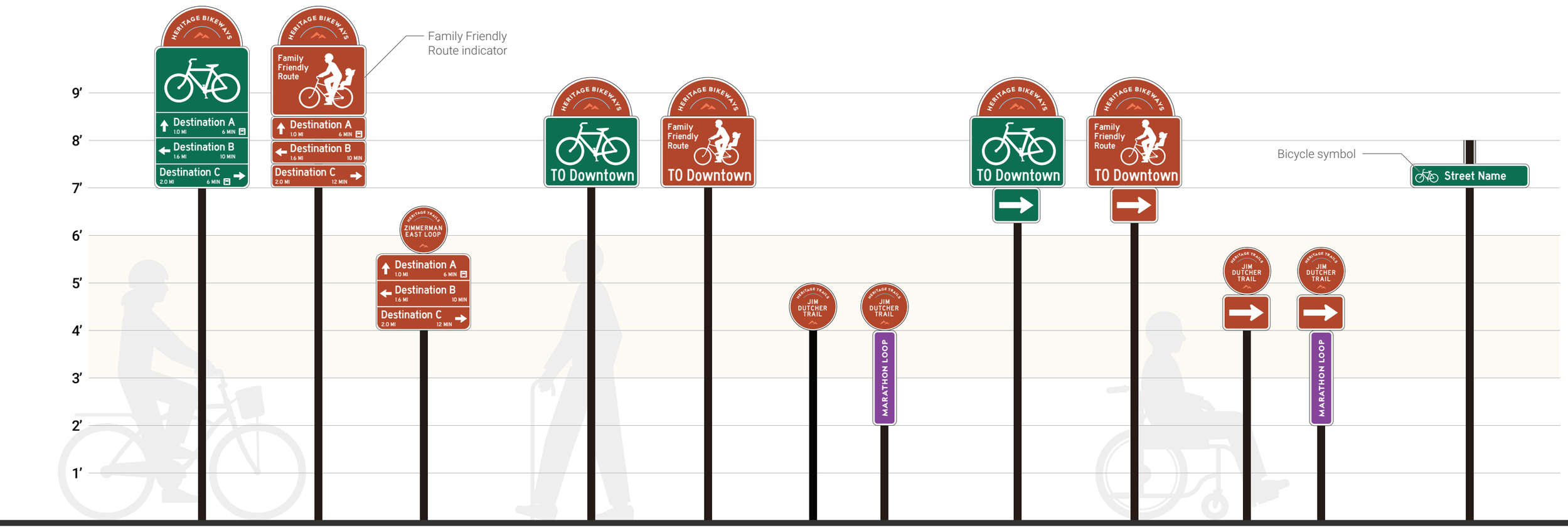
Alternates with optional cobranding blades

Mile Marker

Street / Trail Intersection

Pavement Marking

FUNDAMENTAL NAVIGATIONAL ELEMENTS



Decision

On Street *Off Street*

Confirmation

On Street *Off Street*

Turn

On Street *Off Street*

Street Name

For streets that contain bikeways

Wayfinding Element Descriptions

ACCESS ELEMENTS

KIOSKS

Information kiosks are intended to be placed at major trail junctions, trailheads, or parks in a location that allows for people to gather without obstructing trail use. Information presented on kiosks include network maps (map design is not within the scope of this plan but should aim to tie into the established look and feel of the wayfinding system), trail etiquette and emergency information, trail/park name, and any co-branding logos. All kiosk sign panels are to be laminated with anti-graffiti laminate.

SECONDARY ACCESS SIGNS

Trail confirmation signs assembled with a trail etiquette sign are to be placed at more local access points such as neighborhood connections to the trail system.

ENHANCED NAVIGATIONAL ELEMENTS

MILE MARKERS

This plan recommends that mile markers be reserved for the future Marathon Loop only, and thus will receive additional branding unique to the Marathon Loop. If the City decides to implement mile markers throughout the entire trail system, careful consideration should be given to ensure that the branding of Marathon Loop mile markers (i.e., color and logo) are distinguished from other mile markers and that a consistent approach to where numbering starts/ends be achieved.

STREET/TRAIL INTERSECTION SIGNS

Street/Trail Intersection sign assemblies will vary depending on context (e.g. at-grade crossings will differ from grade-separated crossings). For at-grade applications, if mast arms for crossing signals are already in place, trail name signs should be mounted to existing mast arms and street name signs should be mounted on posts or other available features, oriented towards trail users. Otherwise, both street and trail name signs shall be post-mounted on one side of the road. If street widths exceed three lanes, consider installing two post-mounted assemblies on both sides of the street.

STREET NAME SIGNS

This plan recommends that any street containing bikeways have street name signs that include a bicycle symbol to further enhance awareness of the presence of bicycles on that street. For example, Poly Drive street name signs would include a bicycle symbol.

FUNDAMENTAL NAVIGATIONAL ELEMENTS

DECISION SIGNS

Decision signs for on-street bikeways will include enhancement/branding markers, destination information (including travel distance and time), and icons for certain destinations. Off-street decision signs will include the same information but exclude travel times due to the variety of modes that will be using the trails.

CONFIRMATION AND TURN SIGNS

When appropriate, confirmation and turn signs for the on-street network may include destination information for regional destinations (e.g. Downtown). When including a destination is not necessary, the words “BIKE ROUTE” may be used instead. For off-street confirmation and turn signs, a destination is not typically included. Instead, the signs are marked with the trail name; however, in some cases it may be necessary to include the destination name in lieu of the trail name for wayfinding clarity.

ENHANCEMENT MARKERS AND BRANDING

FINIALS/TOPPERS

Used to provide consistent branding throughout the system. On-street finials are semi-circle and will be marked as “Heritage Bikeways”, while off-street facilities will be marked as “Heritage Trails”.

FAMILY FRIENDLY ROUTE DESIGNATION

For on-street bikeways that meet the City’s standards for high-comfort or family friendly routes, the “Family Friendly Route” sign shall be used in place of the standard green bike symbol (MUTCD D11-1), further branding the network as an all-ages-and-abilities network.

06 Implementation

Sign Placement and Programming

Placement plans for the preferred wayfinding family were developed in GIS with specific locations for each wayfinding feature. Placement plans are provided in Appendix C (digital format) in GIS and Google MyMap format to facilitate simple sharing with contractors and partner agencies.

Due to the scale of the overall system, this plan addresses sign placement for 200 signs along priority corridors identified by the Steering Committee, including:

- Avenue C / Avenue D / 9th Ave N / 21st St W / Lyman Ave / Arvin Rd (priority bicycle boulevard from the 2017 Billings Area Bikeway & Trails Master Plan)
- Lewis Avenue
- Jim Dutcher Trail
- Alkali Creek Trail
- Kiwanis Trail
- BBWA Canal Trail Corridor (Canal Trail)
- Rimrock Road
- Poly Drive
- Portions of Shiloh Road

Of the 200 signs located in the placement plan, over 100 signs were fully programmed as part of this plan, meaning sign schedule data fields for sign copy and iconography (if applicable) were populated. Signs that have been programmed are ready for fabrication and installation at the adoption of this plan.

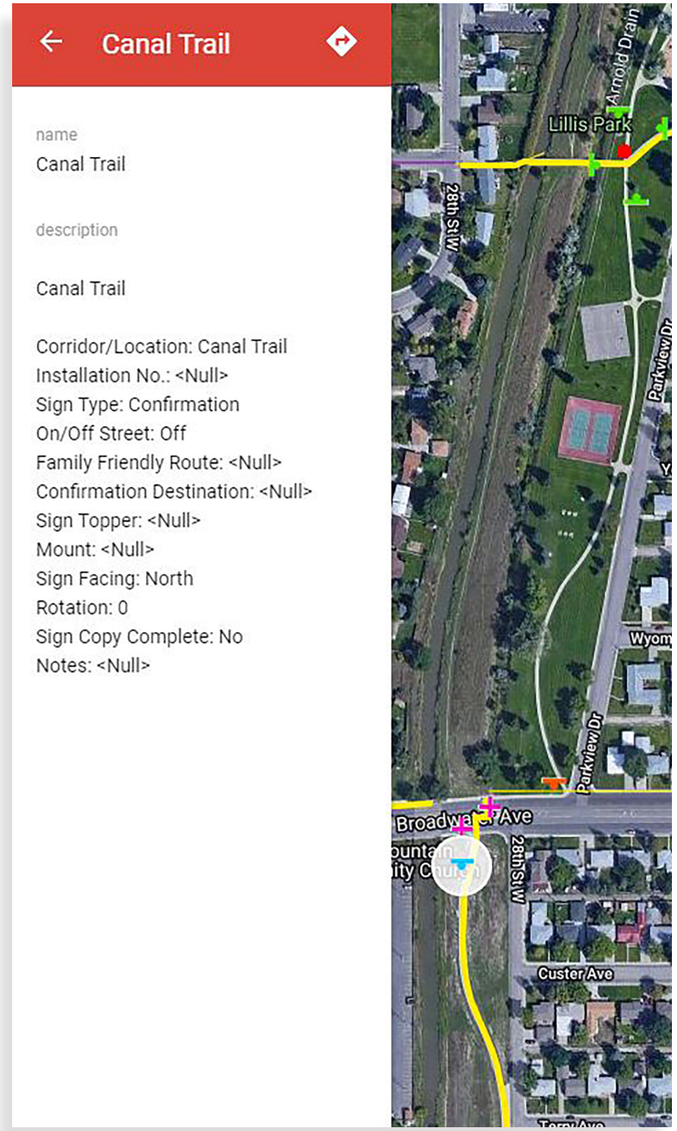
FUTURE PLACEMENT AND PROGRAMMING

Following the guidelines set forth in Chapter 2 (Wayfinding Best Practices) and the sign schedule provided as part of this plan, Billings MPO and City staff can properly locate and program wayfinding signs. This plan recommends that any bikeways or trails that are existing or slated for near-term construction should be prioritized for wayfinding implementation. Moving forward, wayfinding elements should be considered part of the complete implementation of any future bikeways or trails and should be installed at the time of construction. Therefore, wayfinding elements should be considered in cost projections and the design process.

FLEXIBILITY IN SIGN PLACEMENT AND PROGRAMMING

It is important to recognize that flexibility and adaptability will be necessary in future efforts to locate and program wayfinding signage. While the Wayfinding Best Practices chapter of this plan serves as a solid guide, MPO and City staff may need to make judgements regarding which destinations to include, perceived sense of arrival for the sake of dropping destinations from signage (e.g. West End is not well-defined), or the specific location of signs depending on context.

Additionally, as new bikeways and trails are built, existing signage will need to be updated to reflect connections made by new routes.



Screenshot of the online sign placement plan through Google MyMaps, showing location, orientation, and sign schedule information.

Cost Estimates

Working with a local sign fabricator, the planning team developed planning-level implementation costs for the proposed wayfinding system. These per-unit costs include labor, posts, anchors, signs, concrete footings, and installation per City of Billings specifications, but do not include the following:

- Any potential required permitting or engineering fees
- Coring of concrete or any removal of concrete or asphalt required to install signs. Coring of concrete will be an additional $100 per sign and cutting of asphalt will be an additional $80.
- Reinforcing steel
- Staking of signs, unless otherwise agreed

The unit costs reflected in Table 2 represent the cost of ordering one unit. Ordering higher quantities will result in a lower per-unit cost (e.g. 25 signs may result in a 5% drop in unit cost). The savings in higher quantities is especially true for kiosks.

Table 2. **General Cost Estimates**

Wayfinding Element	Unit	Unit Cost
On-Street Elements		
Decision sign	Each	$425
Confirmation sign	Each	$395
Turn sign	Each	$435
Street name sign	Each	$410
Off-Street Elements*		
Mile marker	Each	$505
Trail/street intersection sign	Each	$485
Decision sign	Each	$450
Confirmation sign	Each	$420
Turn sign	Each	$435
Trail etiquette sign	Each	$450
Kiosk (excluding sandstone)	Each	$6,860

*Assumes powder coated steel tubing with no holes; option to use powder coated Telespar (with holes) posts for a cost savings of approximately $15/unit ($20/unit for mile markers).

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Appendix C

Design Intent Drawings

DESIGN INTENT DRAWINGS

Billings Wayfinding
Signage Plan

Billings Metropolitan Planning Organization
2825 3rd Avenue North, 4th Floor
Billings, MT 59101

Contact: Lora Mattox
Ph: 406.247.8622

TABLE OF CONTENTS

Alta Planning + Design
8 East Broadway, Suite 203
Salt Lake City, UT, 84111
Ph: 801.746.1435

MATERIALS PALETTE

Contractor shall be responsible for supplying samples for all colors and materials within the palette.

	W White	Wr White - Reflective	B Saddle Brown	Ch Standard Green	G Light Blue	C Blue	R Orange	Y Dark Brown	A Aluminum
Color:	White	MP18071	Color match: C29, M86, Y100, K6	Color match: C89, M33, Y78, K21	Color match: C45, M7, Y2, K0	Color match: C84, M41, Y6, K0	Color match: C0, M68, Y71, K0	Color match: C62, M68, Y70, K76	-
Materials:	TBD	TBD	TBD	TBD	TBD	TBD	3M 3930 High Intensity Retroreflective	Powder coated	Metal
Process:	TBD	TBD	TBD	TBD	TBD	TBD	TBD	Powder coated, with Prismatic Powders or equal	-

TYPOGRAPHY

Fabricator is responsible for acquiring project related fonts.

Highway Gothic

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz 1234567890

Highway Gothic Narrow

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz 1234567890

Archerus Grotesque Black

Aa Bb Cc Dd Ee Ff Gg Hh Ii Jj Kk Ll Mm Nn Oo Pp Qq Rr Ss Tt Uu Vv Ww Xx Yy Zz 1234567890

ARTWORK

All artwork illustrated on this page shall be provided by Project Owner as electronic vector art.

Logos

Bicycle

Typical Arrow

Icons

Standard AIGA Symbols
source: https://www.aiga.org

Samples:

Contractor is responsible for matching all colors and materials as specified and is required to provide color and material sample for each sign type to the Project Owner for approval.

All painted surfaces to receive Matthews Paint Ultraviolet (UV) and Anti-Graffitti coating. All retroreflective material to receive UV/Anti-Graffiti overlaminate, or owner approved equal.

No substitute typefaces will be accepted. Set kerning tracks to visually approximate sign drawings. Kerning shown may vary from exact kerning used to create sign drawings. Refer to specific applications for type sizes and leading requirements.

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Alta Planning + Design
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Salt Lake City, UT 84111
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GENERAL NOTES

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- The quality of fit and finish on the final product must meet or exceed the requirements of these design intent documents. Any variations to design, materials, or fabrication methods must be approved by the Owner or Representive.
- Welds: All welds shall be ground smooth, paint all seams.
- Hardware: All exposed hardware shall be tamper proof fasteners.
- All exposed edges painted to match adjacent face.
- Colors shown are for reference only and are subject to the limitations of the printing process. Refer to referenced color systems contained within these drawings for actual specifications.
- Scaled examples shown are for reference only, and do not necessarily reflect actual site conditions. Detailed site surveys may be required prior to fabrication and installation.
- Messages shown in these drawings are for general reference only. Refer to message schedules for actual required messages.

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Billings Metropolitan Planning Orgnization
CLIENT

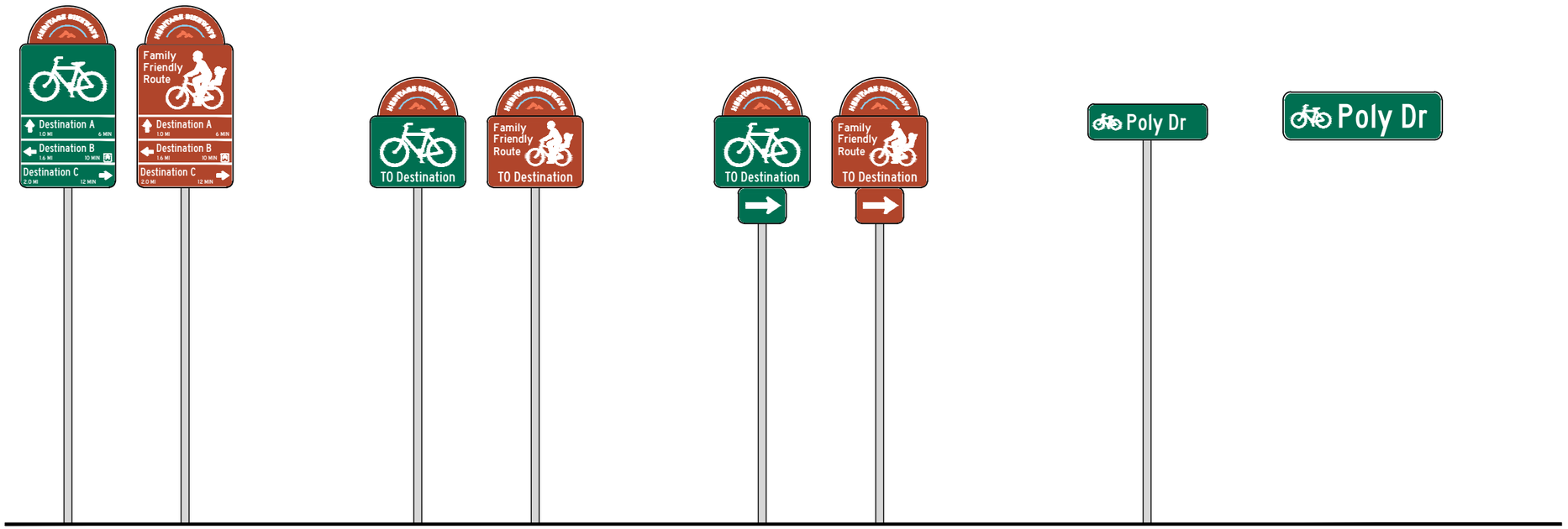
Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

Graphic Standards
SHEET TITLE

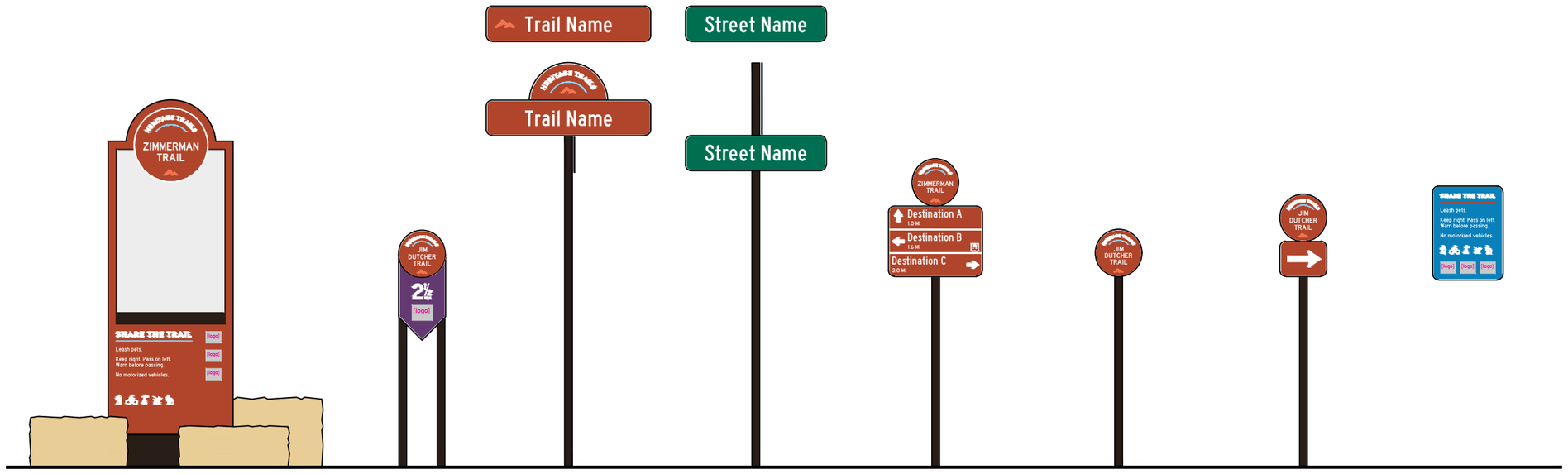
2
SHEET NUMBER

ON-STREET SIGNAGE



DECISION | CONFIRMATION | TURN | STREET NAME

OFF-STREET SIGNAGE



KIOSK | MILE MARKER | TRAIL / STREET CROSSING | DECISION | CONFIRMATION | TURN | TRAIL ETIQUETTE

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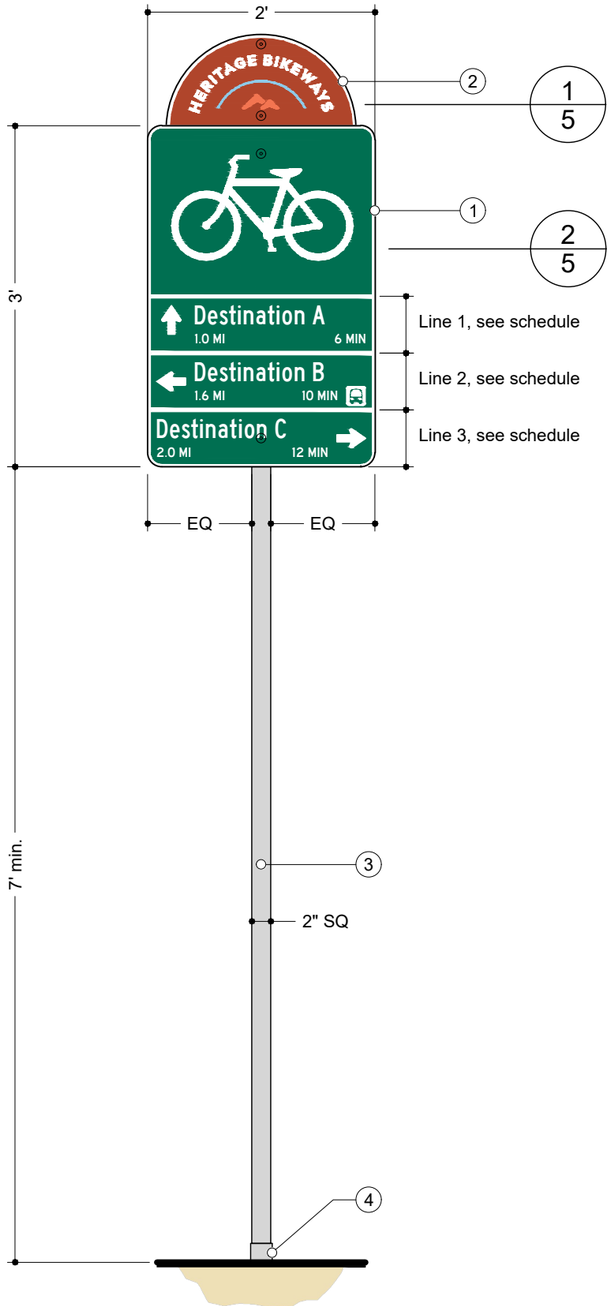
DOCUMENT ISSUE

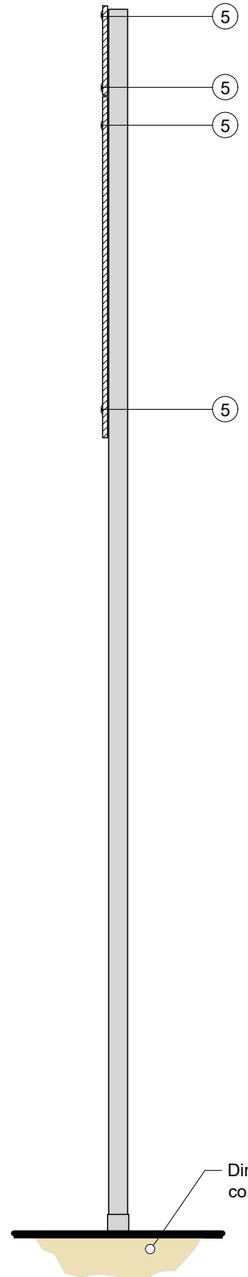
System Overview
SHEET TITLE

3
SHEET NUMBER



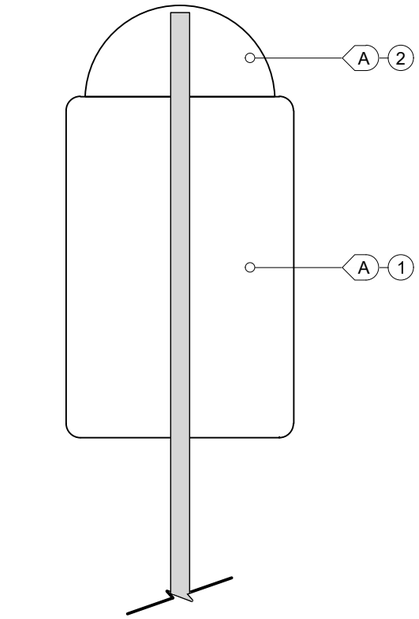
1 FRONT ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"



3 REAR ELEVATION

Scale: 3/4" = 1'-0"

All attachment details to be verified and engineered by contractor.

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. SIGN TOPPER / FINIAL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

3. POST

MATERIAL: 2" square galvanized steel tubing with perforated holes on all four sides

4. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

5. RIVETS

Tamper-proof blind rivets; contractor to determine size; locate rivets as shown or in locations least likely to obscure sign copy
MATERIAL: stainless steel

NOTES:
1. THESE DETAILS FOR REFERENCE ONLY; USE ART FILES FOR SIGN COPY EDITING AND PRINTING
2. SEE SIGN SCHEDULE FOR SIGN COPY, SYMBOLS, AND ICONS
3. FOR DESTINATION NAMES THAT EXCEED GIVEN DIMENSIONS/EXTENTS, ADJUST KERNING AND, IF NEEDED, TEXT HEIGHT; ANY ADJUSTMENTS TO TEXT KERNING AND/OR HEIGHT TO BE APPROVED BY CITY BEFORE PRINTING

Design illustrates possible mounting and/or mounting hardware appearance and are for reference only. All hardware to be sized by contractor. Shop drawing submittals shall detail the actual hardware and connections. All connections must be designed for all applicable loads. Shop drawings shall not compromise the visual appearance of the sign shown.

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Billings Wayfinding Signage Plan
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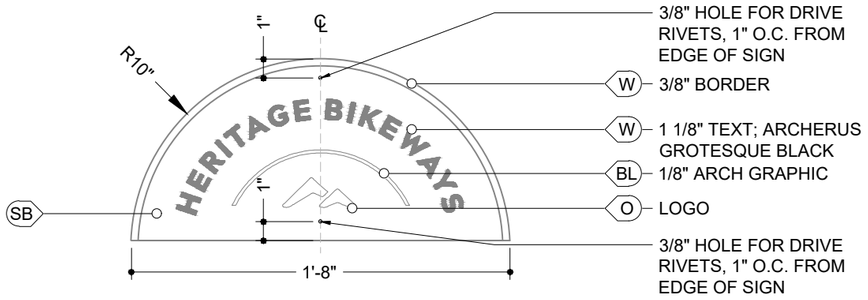
DOCUMENT ISSUE

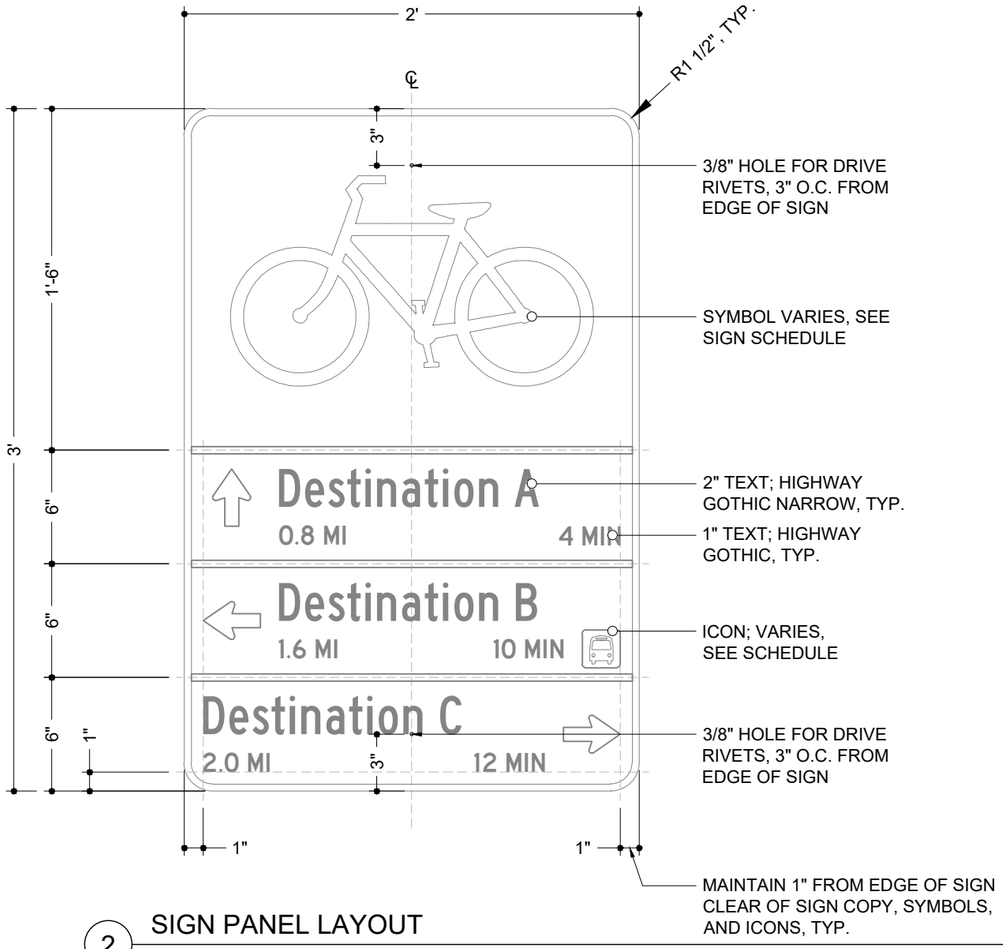
On-street Decision Sign
SHEET TITLE

4
SHEET NUMBER



1 BIKEWAY SIGN TOPPER / FINIAL LAYOUT

Scale: 1 1/2" = 1'-0"



2 SIGN PANEL LAYOUT

Scale: 1 1/2" = 1'-0"

NOTES:
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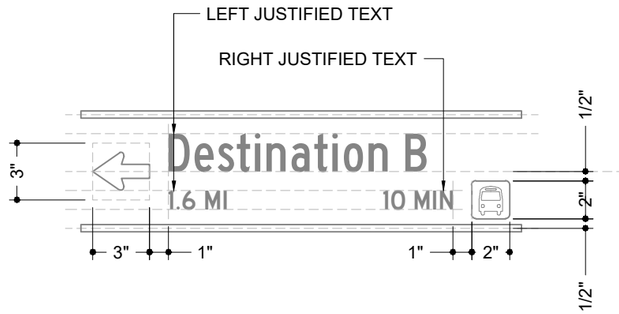
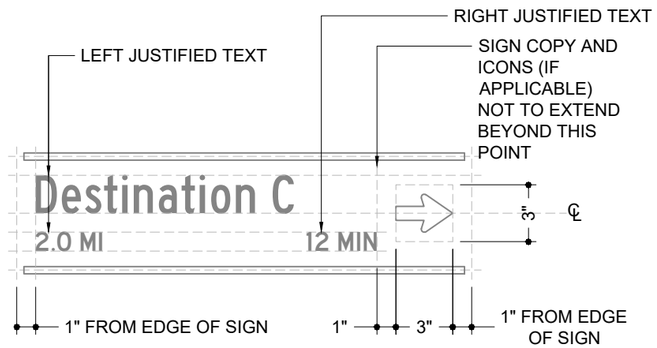


STRAIGHT/LEFT TURN LAYOUT



RIGHT TURN LAYOUT

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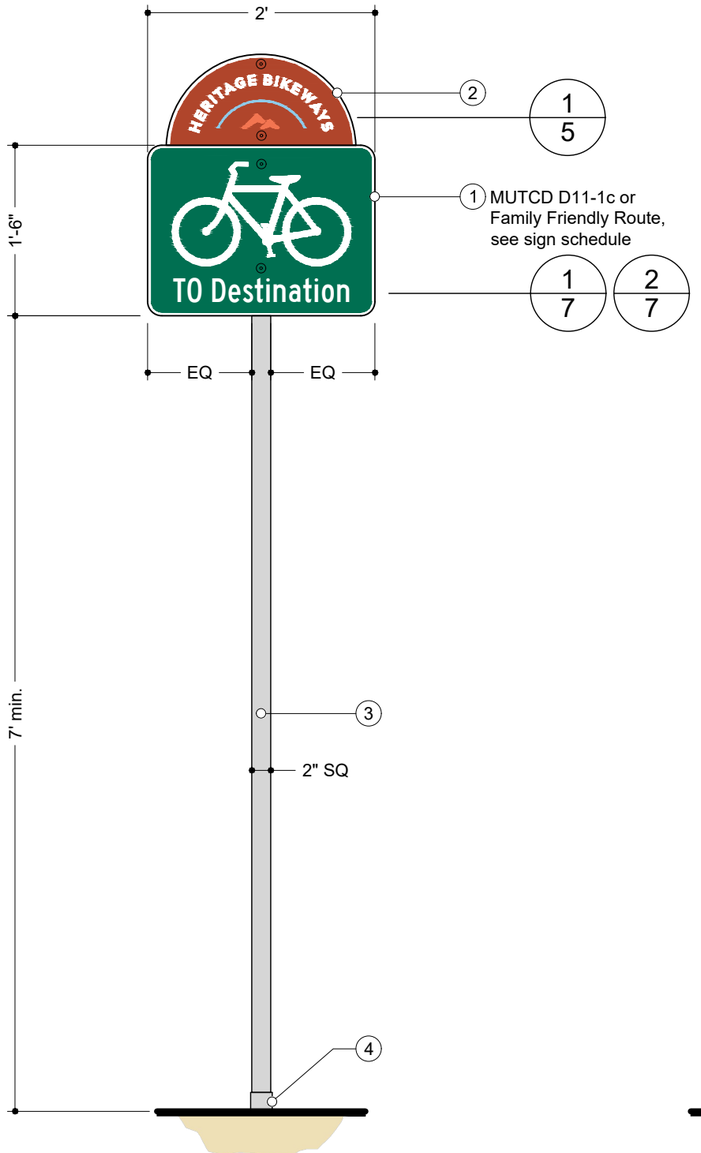
Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

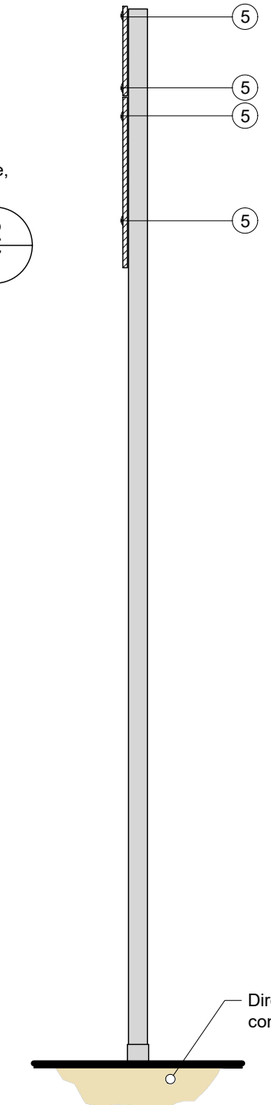
On-street Decision Sign Detail
SHEET TITLE

5
SHEET NUMBER



1 FRONT ELEVATION

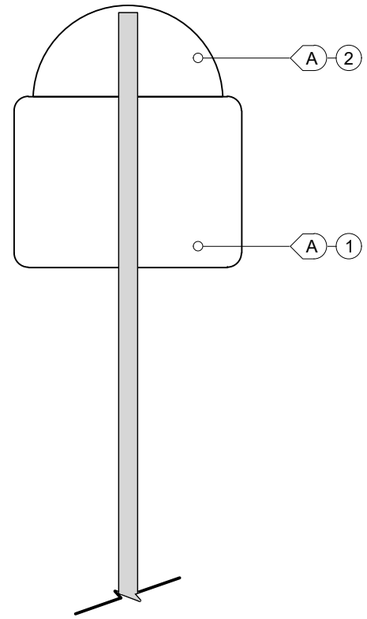
Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"

! All attachment details to be verified and engineered by contractor.



3 REAR ELEVATION

Scale: 3/4" = 1'-0"

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank or MUTCD D11-1c standard (see sign schedule)
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. SIGN TOPPER / FINIAL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

3. POST

MATERIAL: 2" square galvanized steel tubing with perforated holes on all four sides

4. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

5. RIVETS

Tamper-proof blind rivets; contractor to determine size; locate rivets as shown or in locations least likely to obscure sign copy
MATERIAL: stainless steel

NOTES:
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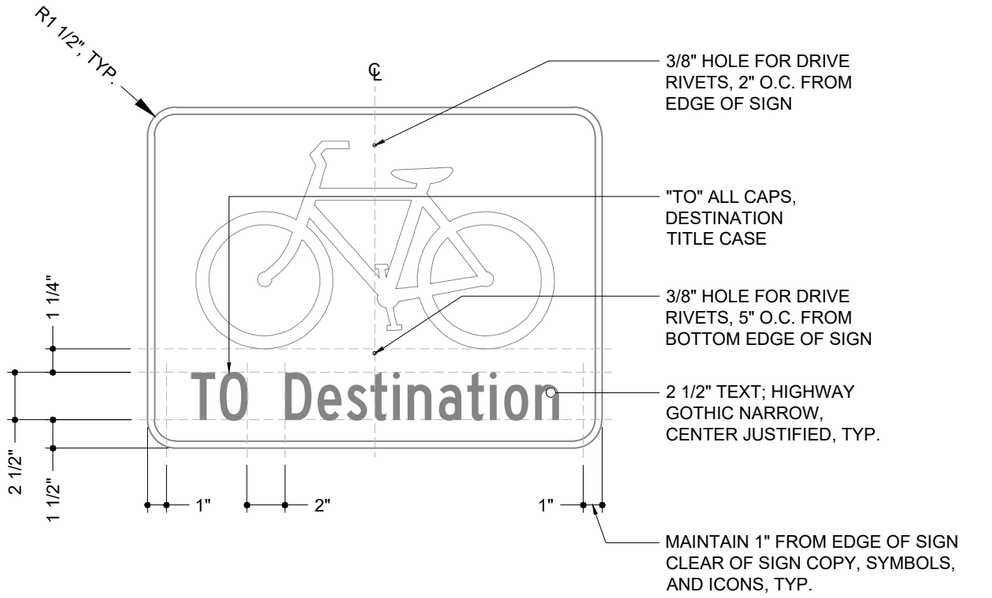
PROJECT

November 2019
DOCUMENT ISSUE

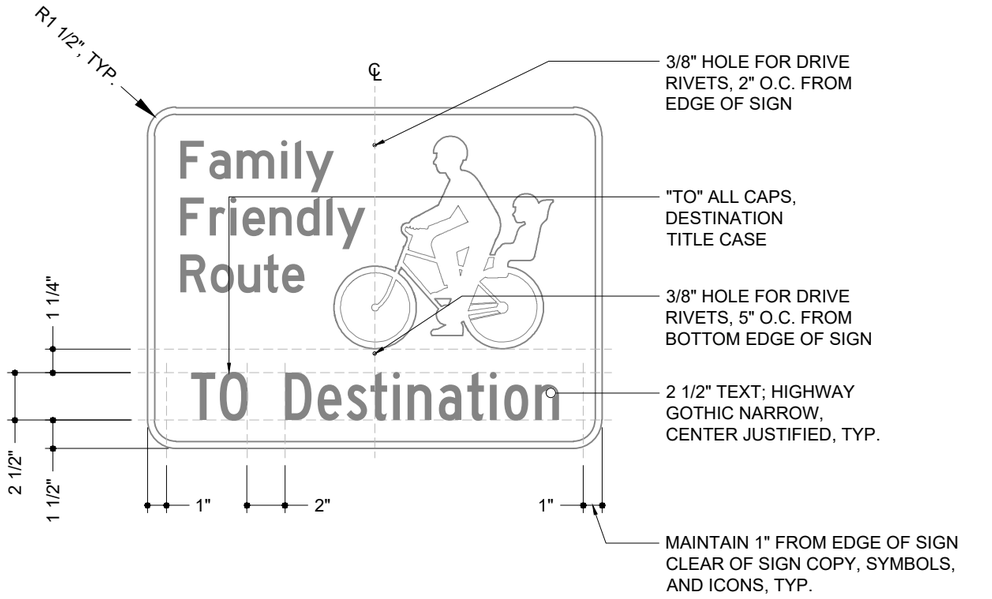
On-street Confirmation Sign
SHEET TITLE

6
SHEET NUMBER



1 SIGN PANEL LAYOUT - MUTCD D11-1c

Scale: 1 1/2" = 1'-0"



2 SIGN PANEL LAYOUT - FAMILY FRIENDLY

Scale: 1 1/2" = 1'-0"

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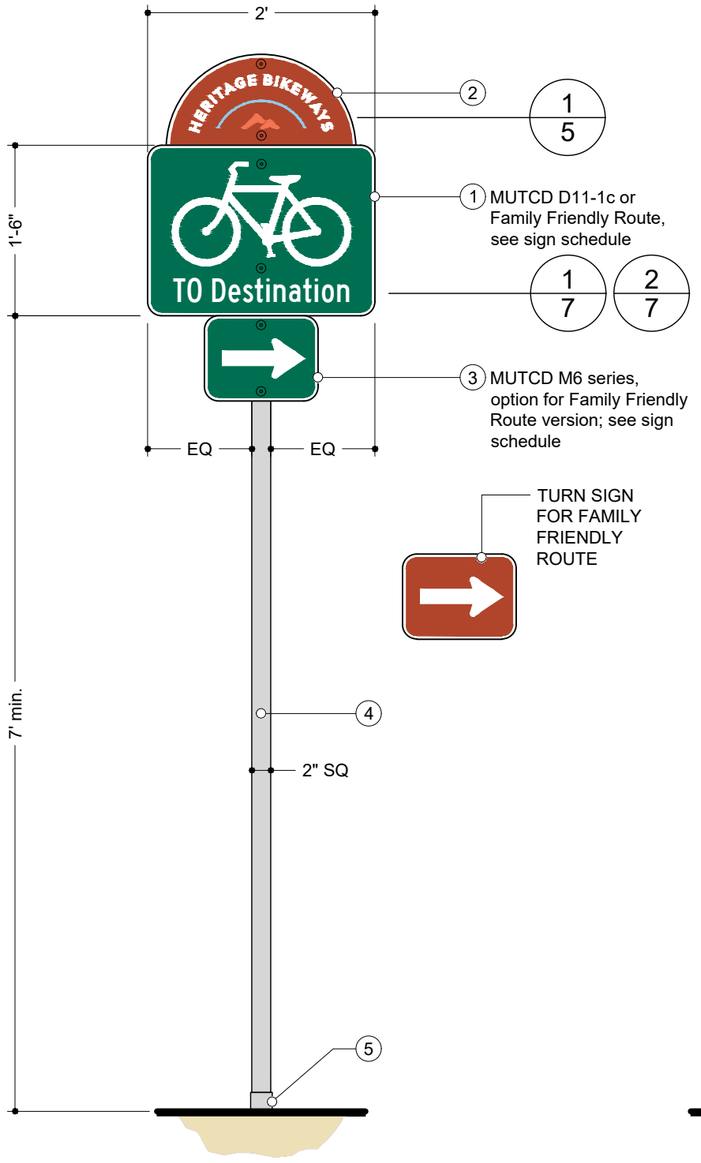
November 2019
DOCUMENT ISSUE

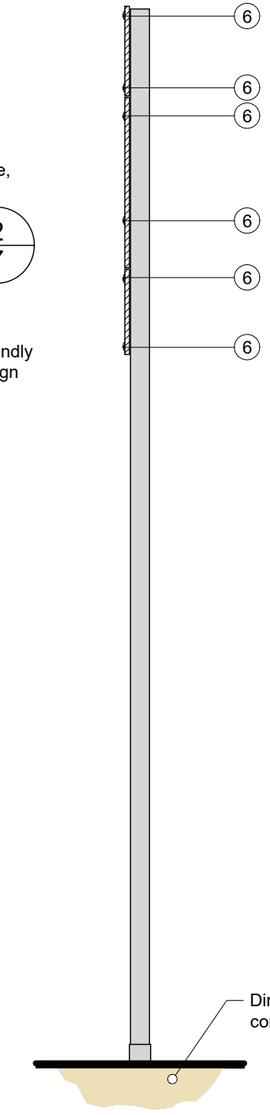
On-street Confirmation Sign Detail
SHEET TITLE

7
SHEET NUMBER



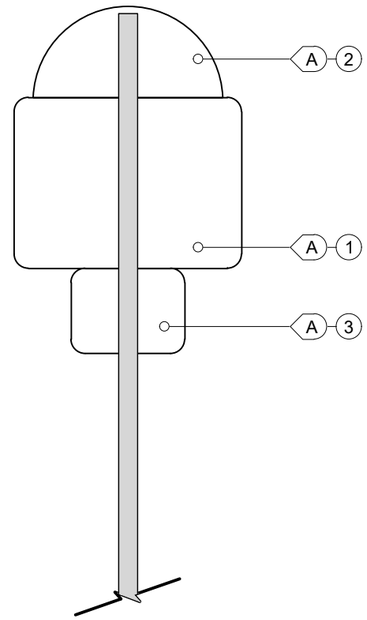
1 FRONT ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"



3 REAR ELEVATION

Scale: 3/4" = 1'-0"

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! All attachment details to be verified and engineered by contractor.

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank or MUTCD D11-1c standard (see sign schedule)
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. SIGN TOPPER / FINIAL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

3. TURN SIGN: MUTCD M6-1

4. POST

MATERIAL: 2" square galvanized steel tubing with perforated holes on all four sides

5. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

6. RIVETS

Tamper-proof blind rivets; contractor to determine size; locate rivets as shown or in locations least likely to obscure sign copy
MATERIAL: stainless steel

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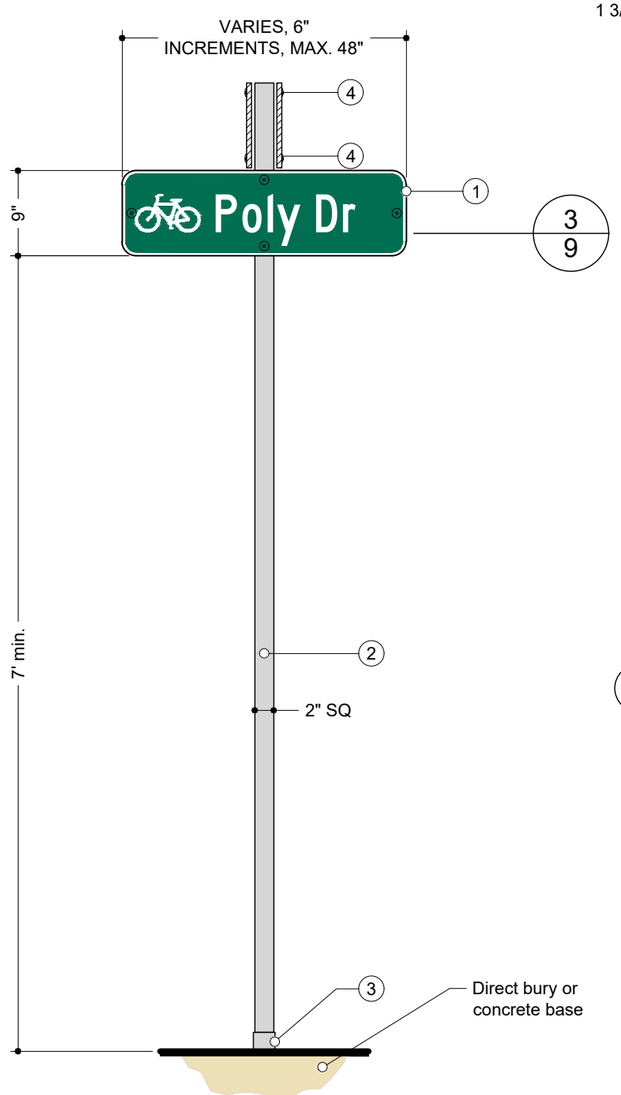
PROJECT

November 2019
DOCUMENT ISSUE

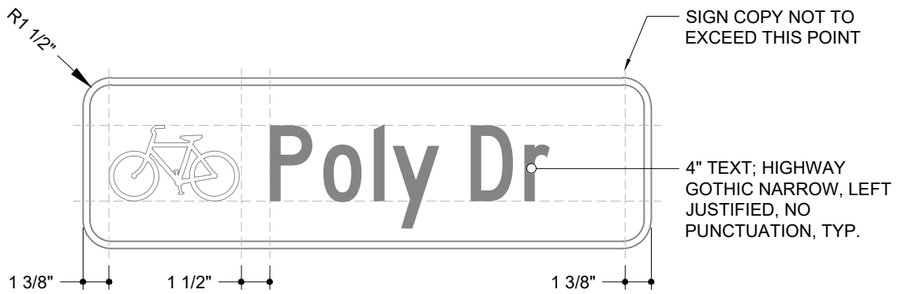
On-street Turn Sign
SHEET TITLE

8
SHEET NUMBER

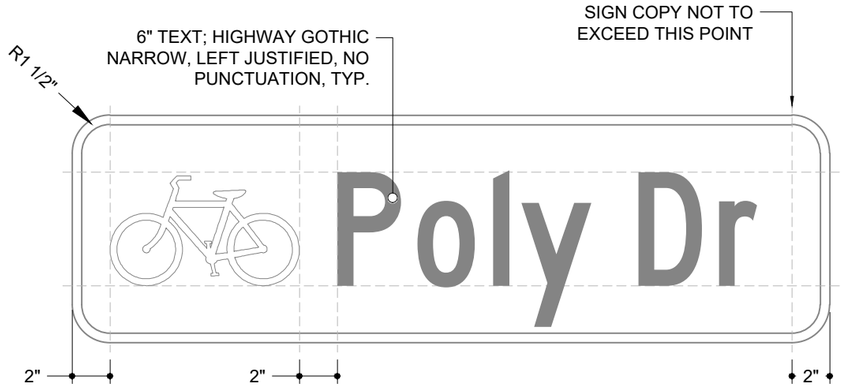
! All attachment details to be verified and engineered by contractor.



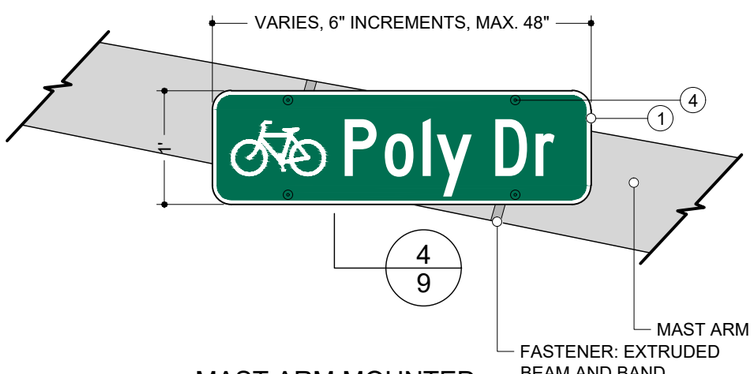
1 POST MOUNTED
Scale: 3/4" = 1'-0"



3 POST MOUNTED - SIGN LAYOUT
Scale: 1 1/2" = 1'-0"



4 MAST ARM MOUNTED - SIGN LAYOUT
Scale: 1 1/2" = 1'-0"



2 MAST ARM MOUNTED
Scale: 3/4" = 1'-0"

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank, size varies
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
POST MOUNTED FASTENERS: 1" drive rivets, 3/8" shaft
MAST ARM MOUNTED FASTENERS: Extruded beam and band with 1" drive rivets

2. POST

MATERIAL: 2" square galvanized steel tubing with perforated holes on all four sides

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

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Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

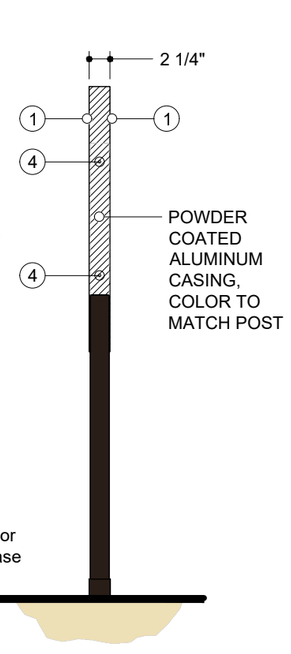
Street Name Sign
SHEET TITLE

9
SHEET NUMBER

> **!** All attachment details to be verified and engineered by contractor.

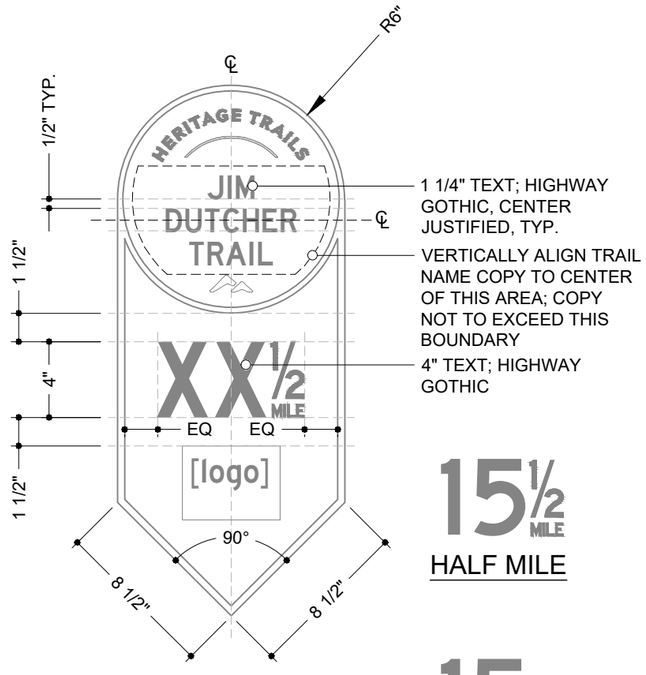
1 FRONT & REAR ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"



3 SIGN LAYOUT

Scale: 3/4" = 1'-0"

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank, size varies
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
POST MOUNTED FASTENERS: 1" drive rivets, 3/8" shaft
MAST ARM MOUNTED FASTENERS: Extruded beam and band with 1" drive rivets

2. POST

MATERIAL: 2" square steel tubing, powder coated

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

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November 2019
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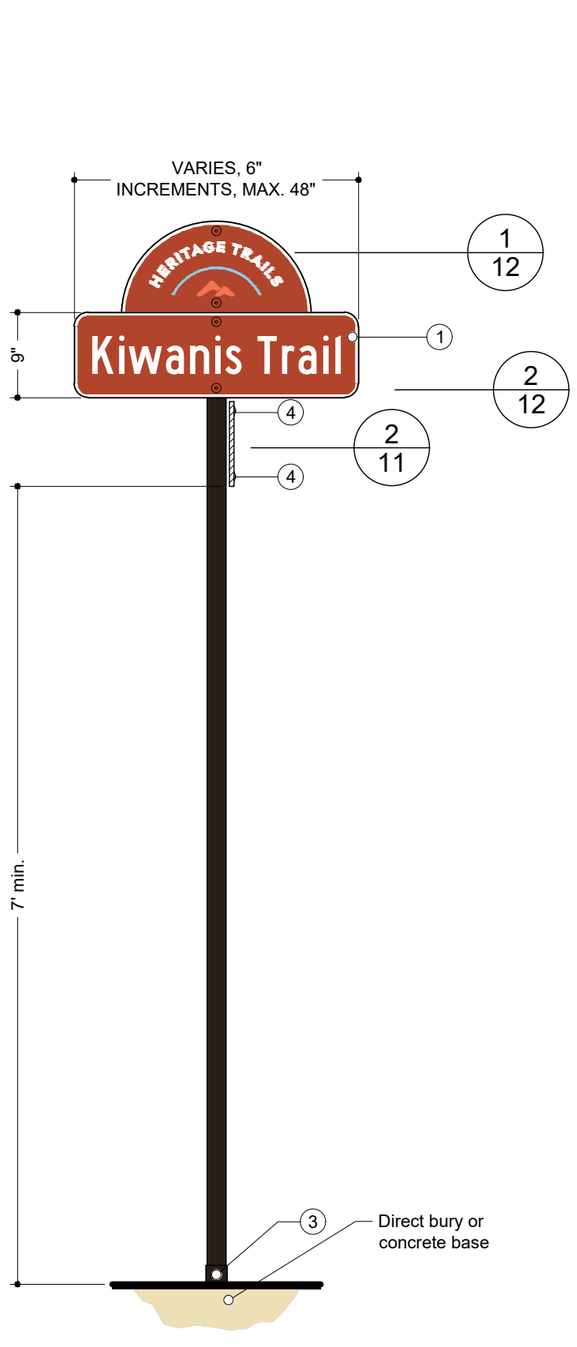
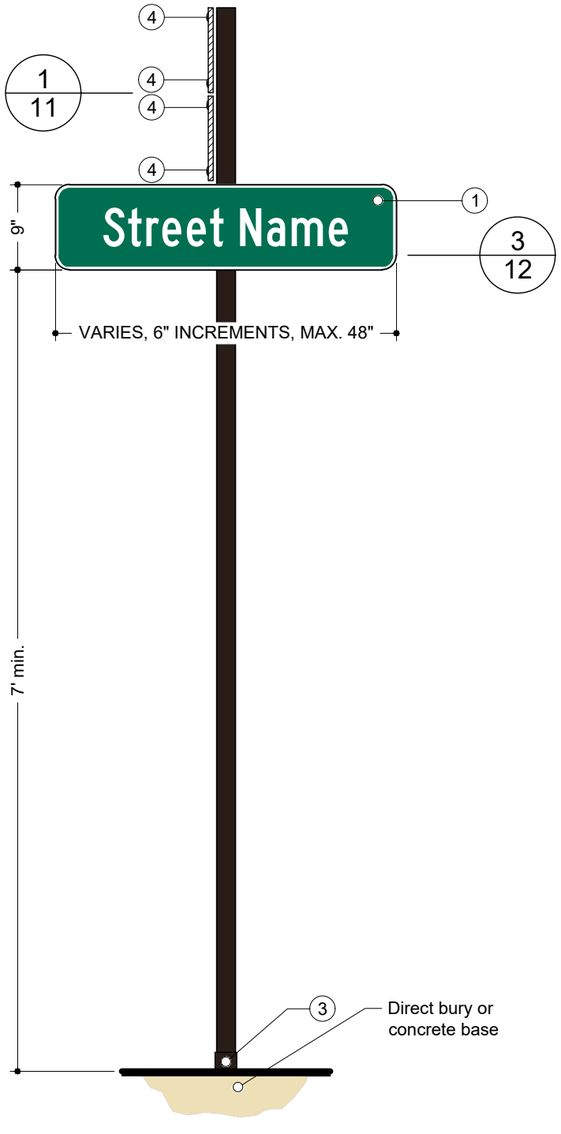
Trail Mile Marker
SHEET TITLE

10
SHEET NUMBER



1 STREET ORIENTED - POST MOUNTED

Scale: 3/4" = 1'-0"



2 TRAIL ORIENTED - POST MOUNTED

Scale: 3/4" = 1'-0"

All attachment details to be verified and engineered by contractor.

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank, size varies
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
POST MOUNTED FASTENERS: 1" drive rivets, 3/8" shaft

2. POST

MATERIAL: 2" square steel tubing, powder coated

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

NOTES:
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November 2019
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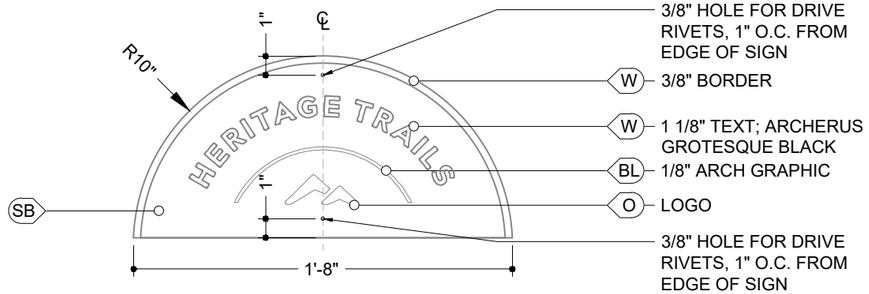
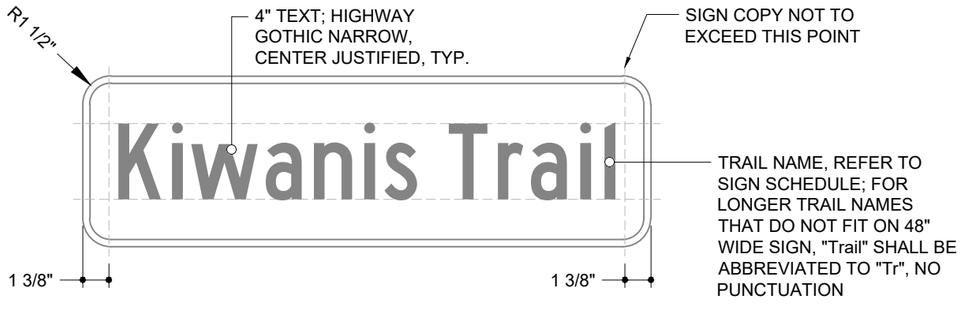
Street/Trail Intersection Sign - Post Mounted
SHEET TITLE

11
SHEET NUMBER



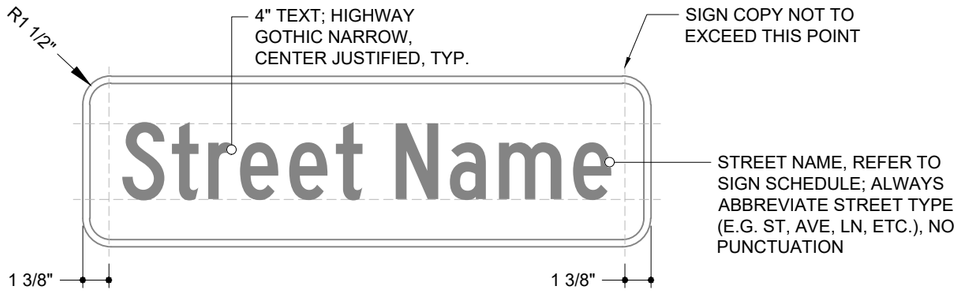
1 TRAIL SIGN TOPPER / FINIAL LAYOUT

Scale: 1 1/2" = 1'-0"



2 STREET ORIENTED - POST MOUNTED - SIGN LAYOUT

Scale: 1 1/2" = 1'-0"



NOTE: WHEN TRAIL CROSSES STREET THAT CONTAINS BIKEWAY, USE STREET NAME SIGN WITH BIKE SYMBOL; SEE DETAIL 1/14

3 TRAIL ORIENTED - POST MOUNTED - SIGN LAYOUT

Scale: 1 1/2" = 1'-0"

! All attachment details to be verified and engineered by contractor.

NOTES:
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Billings Metropolitan Planning Orgnization
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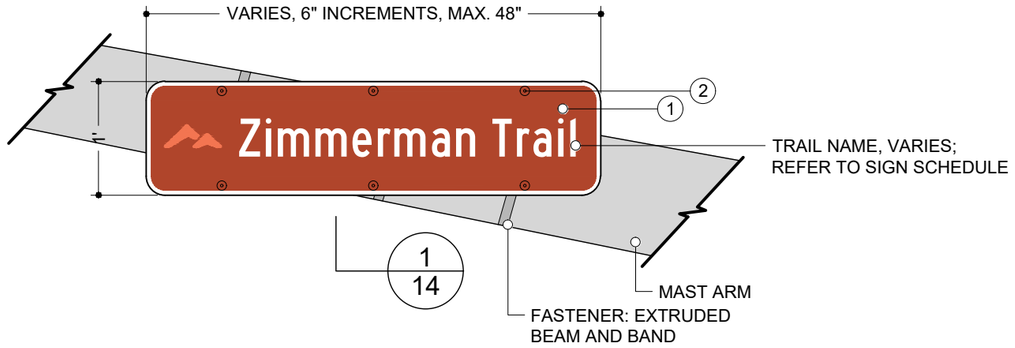
Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

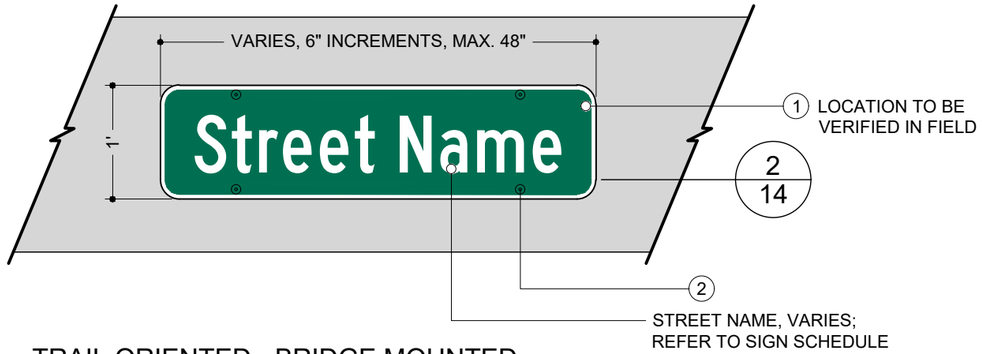
Street/Trail Intersection Sign - Post Mounted - Detail
SHEET TITLE

12
SHEET NUMBER



1 STREET ORIENTED - MAST ARM MOUNTED

Scale: 3/4" = 1'-0"



2 TRAIL ORIENTED - BRIDGE MOUNTED

Scale: 3/4" = 1'-0"

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank, size varies
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
MAST ARM MOUNTED FASTENERS: Extruded beam and band with 1" drive rivets
BRIDGE MOUNTED FASTENERS: Contractor to determine mounting details depending on bridge material

2. BOLTS

Tamper-proof anchor bolts, lock washers and nuts; fabricator to determine size; include spacers to prevent bending of sign panel
MATERIAL: stainless steel

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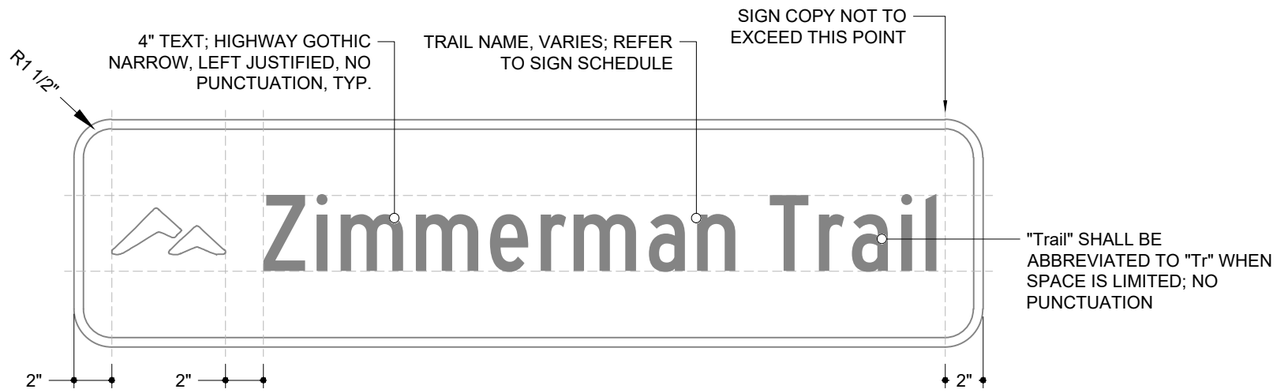
Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

Street/Trail Intersection Sign - Mast Arm or Bridge Mounted
SHEET TITLE

13
SHEET NUMBER



1 MAST ARM MOUNTED - SIGN LAYOUT

Scale: 1 1/2" = 1'-0"

NOTE: WHEN OVERCROSSING STREET CONTAINS BIKEWAY, USE STREET NAME SIGN WITH BIKE SYMBOL; SEE DETAIL 2/14

2 BRIDGE MOUNTED - SIGN LAYOUT

Scale: 1 1/2" = 1'-0"

KEY NOTES

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Billings Wayfinding Signage Plan
PROJECT

November 2019
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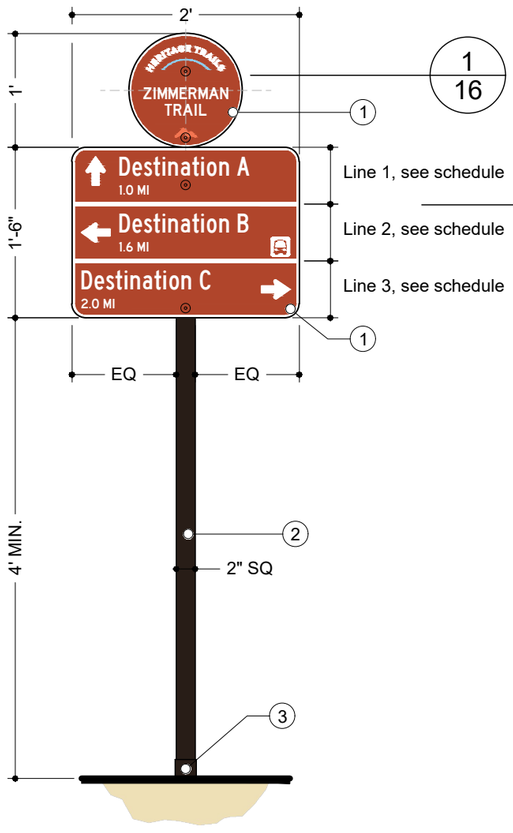
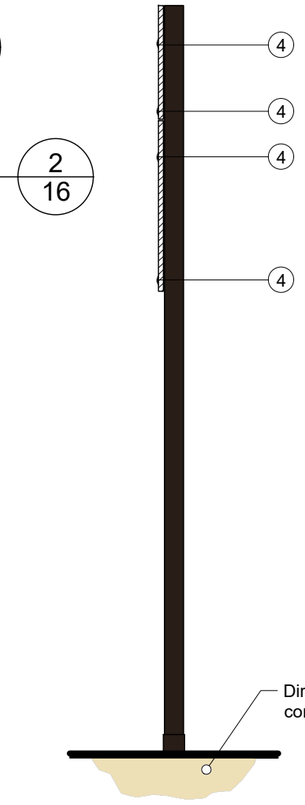
Street/Trail Intersection Sign - Mast Arm or Bridge Mounted - Detail
SHEET TITLE

14
SHEET NUMBER



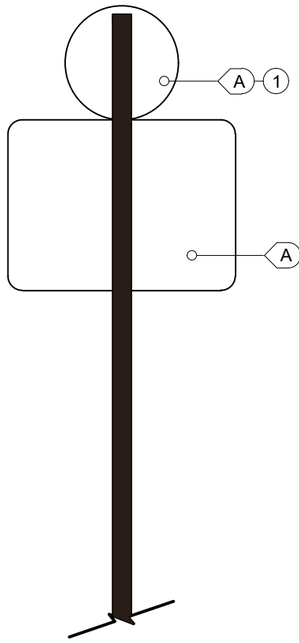
1 FRONT ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"



3 REAR ELEVATION

Scale: 3/4" = 1'-0"

All attachment details to be verified and engineered by contractor.

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. POST

MATERIAL: 2" square steel tubing, powder coated

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

NOTES:
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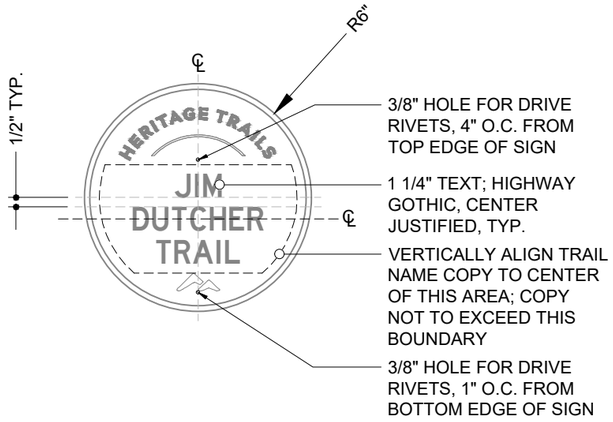
Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

Trail Decision Sign
SHEET TITLE

15
SHEET NUMBER



1 SIGN PANEL LAYOUT - MEDALLION TRAIL MARKER

Scale: 1 1/2" = 1'-0"

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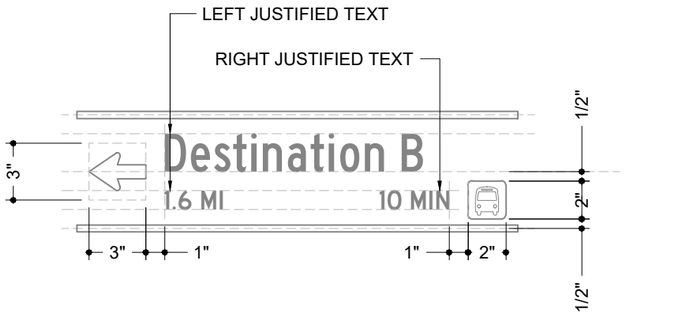
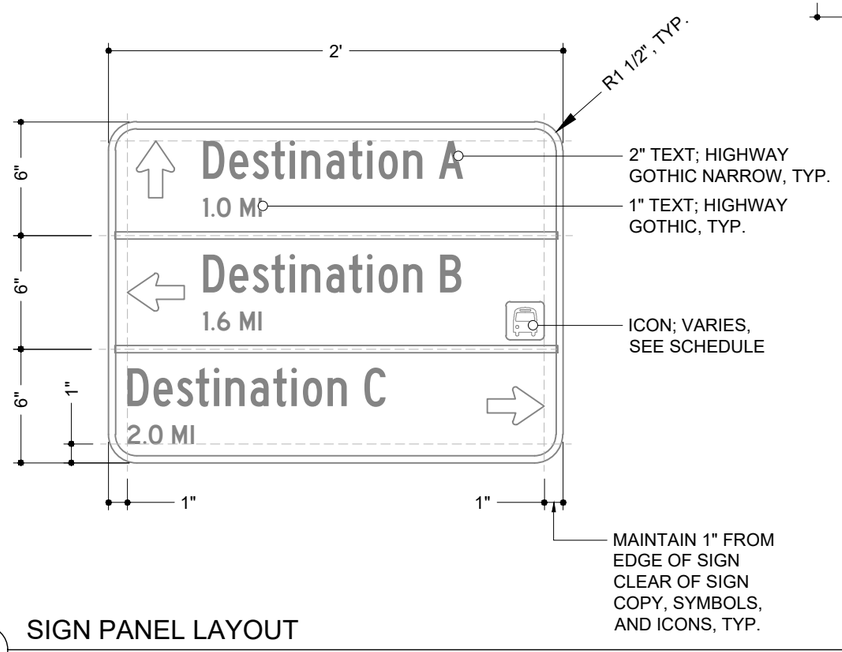
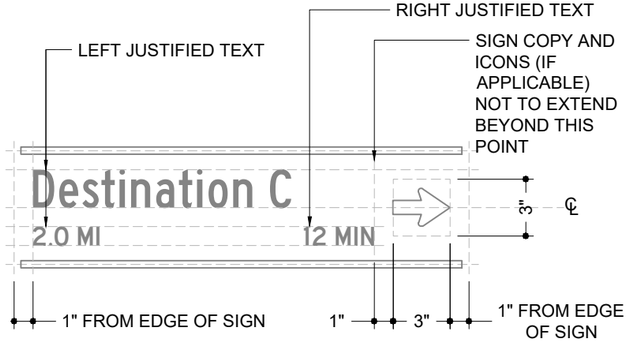


STRAIGHT/LEFT TURN LAYOUT





RIGHT TURN LAYOUT

2 SIGN PANEL LAYOUT

Scale: 1 1/2" = 1'-0"

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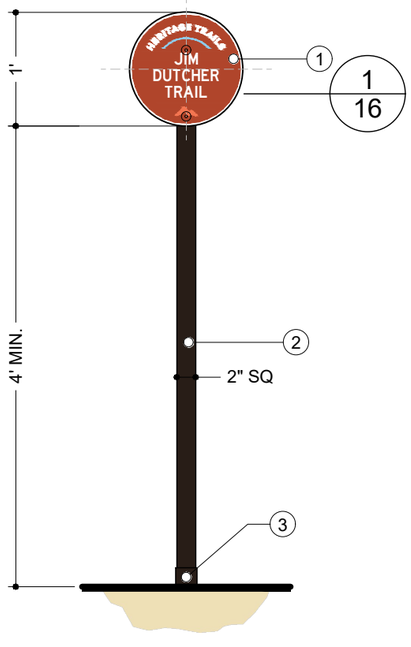
PROJECT

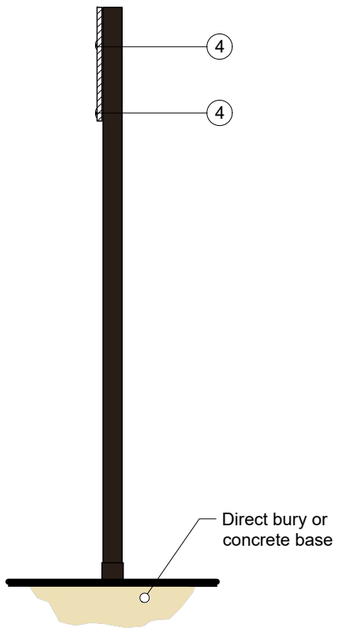
November 2019
DOCUMENT ISSUE

Trail Decision Sign Detail
SHEET TITLE

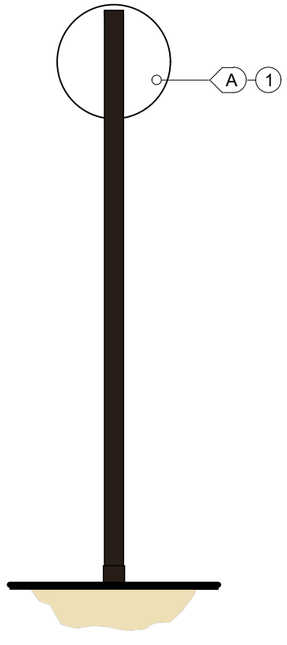
16
SHEET NUMBER



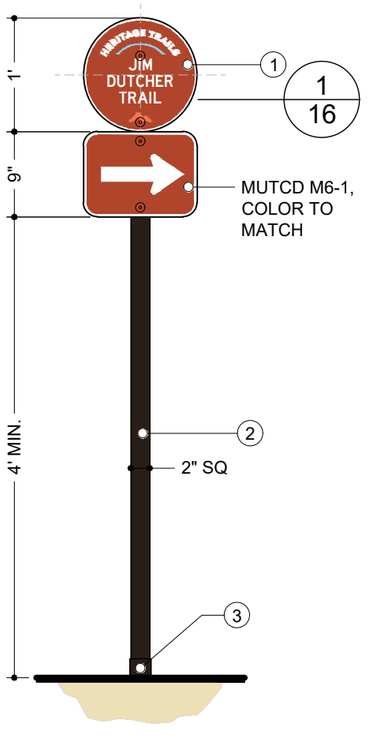
FRONT ELEVATION



RIGHT ELEVATION



REAR ELEVATION



FRONT ELEVATION

1 OFF-STREET CONFIRMATION SIGN

Scale: 3/4" = 1'-0"

2 OFF-STREET TURN SIGN

Scale: 3/4" = 1'-0"

! All attachment details to be verified and engineered by contractor.

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. POST

MATERIAL: 2" square steel tubing, powder coated

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

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Billings Wayfinding Signage Plan
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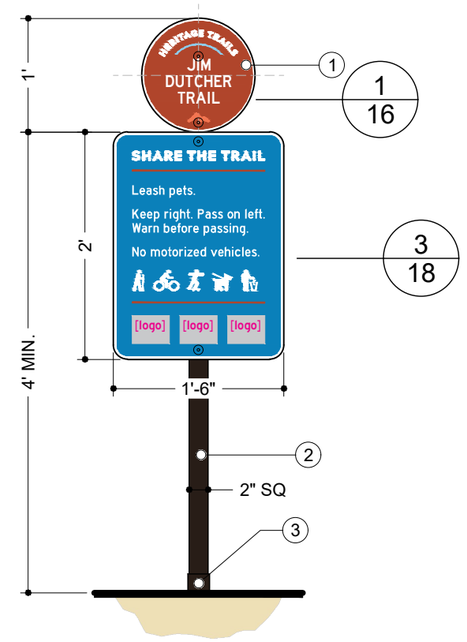
November 2019
DOCUMENT ISSUE

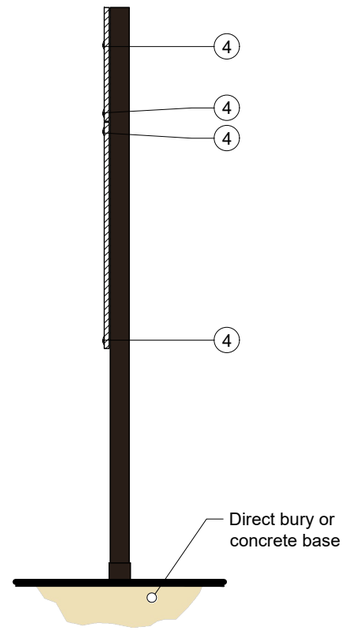
Trail Confirmation & Turn Signs
SHEET TITLE

17
SHEET NUMBER



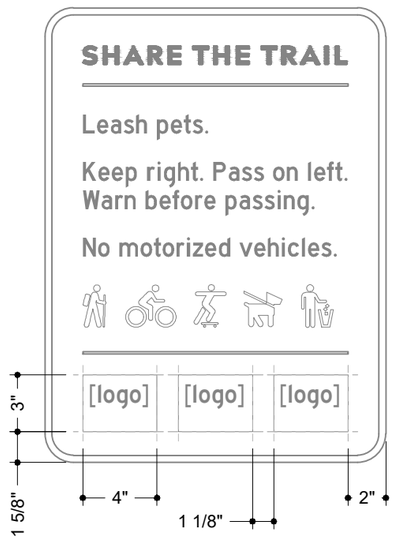
1 FRONT ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT ELEVATION

Scale: 3/4" = 1'-0"



3 SIGN LAYOUT

Scale: 1 1/2" = 1'-0"

LOGOS

SIZE: 3" x 4"
COLOR: WHITE
QUANTITY: THREE (3) MAX.
POSITION: LOGO GROUP CENTERED ON SIGN, REGARDLESS OF QUANTITY

! All attachment details to be verified and engineered by contractor.

NOTE:
TRAIL ETIQUETTE SIGN TO BE MOUNTED ON SELECT OFF-STREET CONFIRMATION SIGNS AT SECONDARY TRAIL ACCESS POINTS; SEE SIGN SCHEDULE AND SIGN PLACEMENT PLAN FOR LOCATIONS

KEY NOTES

1. SIGN PANEL

MATERIAL: .080 gauge aluminum sign blank
FABRICATION PROCESS: printed
EDGES: routed, finished smooth
GRAPHICS: printed latex on high intensity prismatic reflective vinyl
COATING: 3m clear laminate with UV protection and scratch resistance
FASTENERS: 1" drive rivets, 3/8" shaft

2. POST

MATERIAL: 2" square steel tubing, powder coated

3. POST ANCHOR

2-1/4" drivable anchor or breakaway post; verify location

4. RIVETS

Tamper-proof blind rivets; contractor to determine size; contrcator to locate rivets in locations least likely to obscure sign copy
MATERIAL: stainless steel

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Billings Wayfinding Signage Plan
PROJECT

November 2019
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Trail Etiquette Sign
SHEET TITLE

18
SHEET NUMBER

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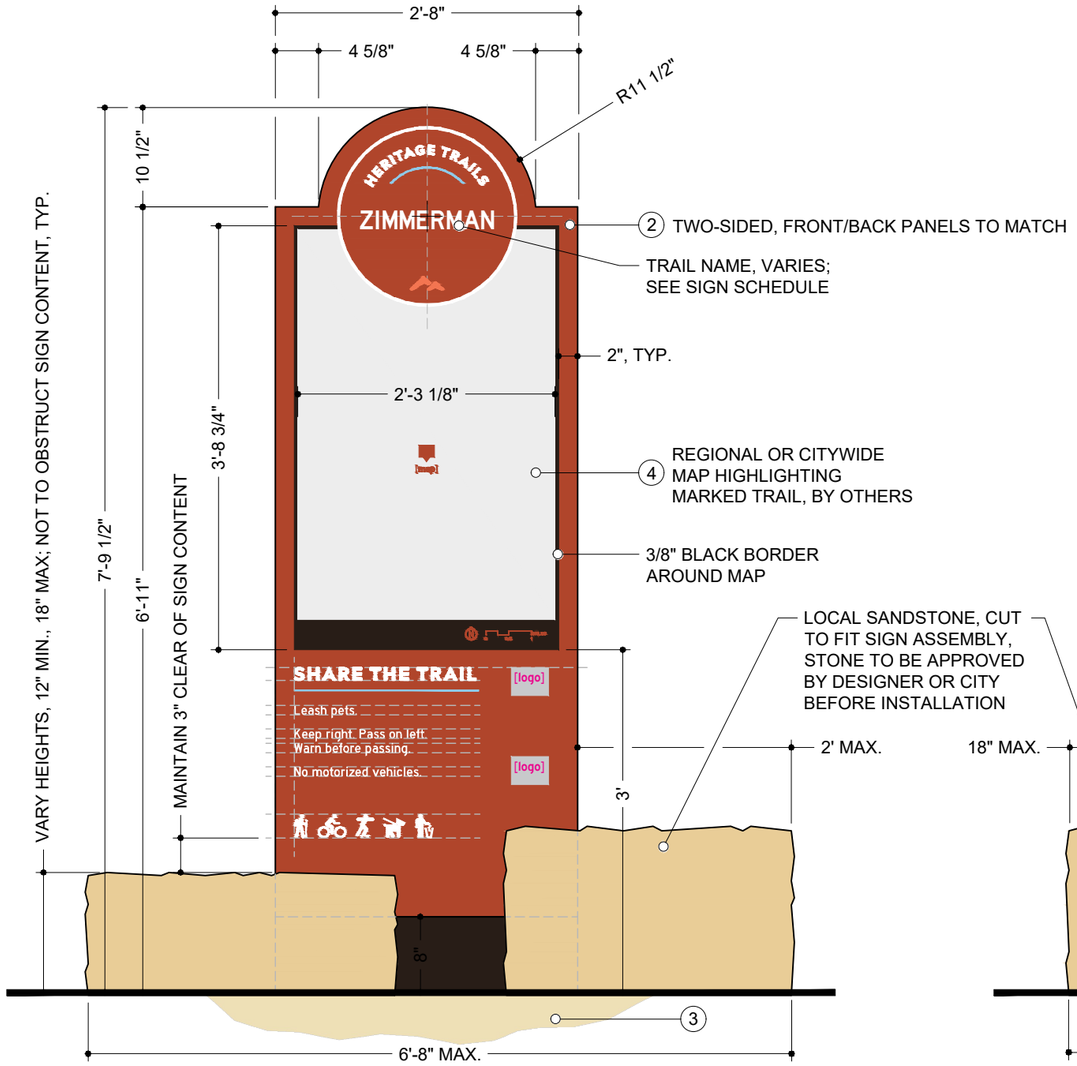
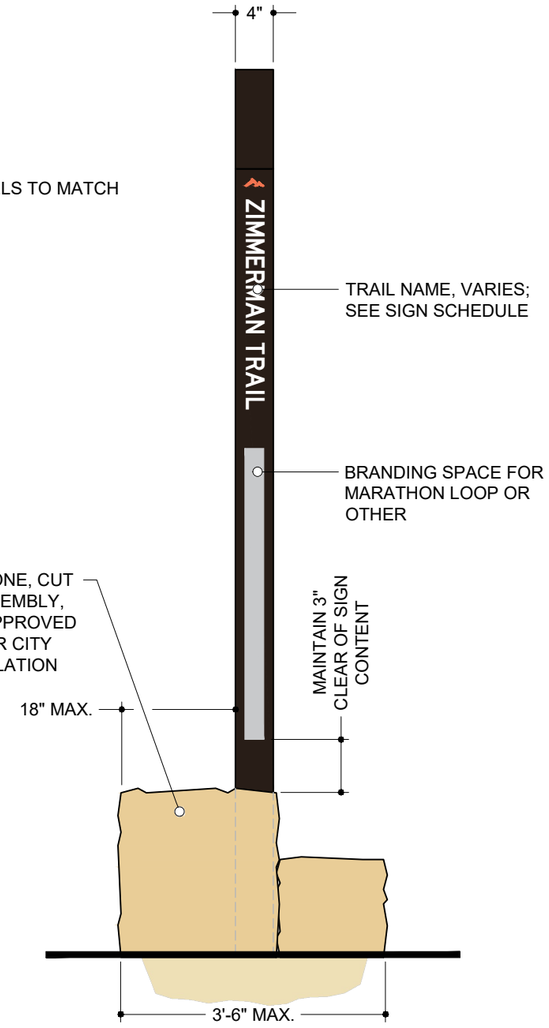


1 FRONT ELEVATION

Scale: 3/4" = 1'-0"



2 RIGHT / LEFT ELEVATION

Scale: 3/4" = 1'-0"

KEY NOTES

1. **ALUMINUM SIGN PANEL FRAME**
   Fabricated aluminum channel internal structure to engineer's specification. Frame to be set inside perimeter of sign sleeve

2. **SIGN PANEL**
   MATERIAL: .080 gauge aluminum
   FABRICATION PROCESS: router cut
   EDGES: routed, finished smooth
   GRAPHICS: vinyl
   ICONS / TEXT: retroreflective vinyl
   COATING: UV protection
   FASTENER:

3. **CONCRETE FOOTING**
   Concrete footing to engineer's specifications
   Conceal hold down bolts within sign structure

4. **MAP PANEL**
   MATERIAL: .080 gauge aluminum
   GRAPHICS: ImageLOC printing or owner-approved equal

NOTES:
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2. SEE SIGN SCHEDULE FOR SIGN COPY, SYMBOLS, AND ICONS
3. FOR DESTINATION NAMES THAT EXCEED GIVEN DIMENSIONS/EXTENTS, ADJUST KERNING AND, IF NEEDED, TEXT HEIGHT; ANY ADJUSTMENTS TO TEXT KERNING AND/OR HEIGHT TO BE APPROVED BY CITY BEFORE PRINTING

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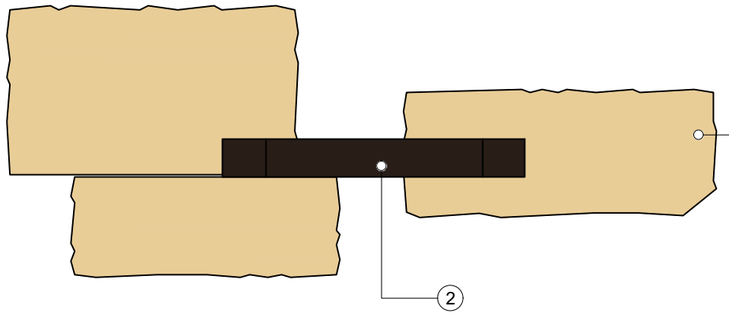
Billings Metropolitan Planning Orgnization
CLIENT

Billings Wayfinding Signage Plan
PROJECT

November 2019
DOCUMENT ISSUE

Trailhead Kiosk
SHEET TITLE

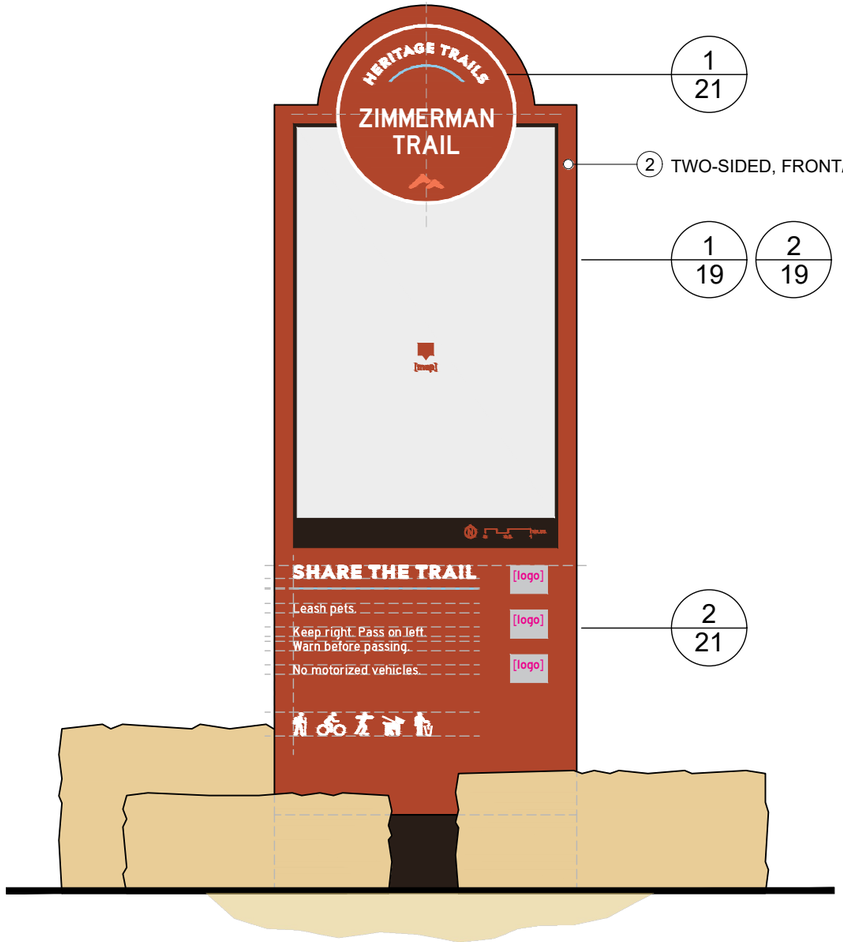
19
SHEET NUMBER



LOCAL SANDSTONE, CUT TO FIT SIGN ASSEMBLY, STONE TO BE APPROVED BY DESIGNER OR CITY BEFORE INSTALLATION

3 PLAN VIEW

Scale: 3/4" = 1'-0"



1/21

2 TWO-SIDED, FRONT/BACK PANELS TO MATCH

1/19 2/19

2/21

NOTES:

1. VARY STONE BLOCK SIZES, REFER TO DETAILS 1/19 AND 2/19 FOR MIN./MAX. DIMENSIONS
2. DESIGNER OR CITY TO APPROVE SELECTED STONE BLOCKS BEFORE INSTALLATION
3. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR SIGN AND STONE INSTALLATION FOR APPROVAL
4. SIGN PANEL AND FRAME ASSEMBLY PER FABRICATOR'S SPECIFICATIONS

4 REAR ELEVATION

Scale: 3/4" = 1'-0"

! All attachment details to be verified and engineered by contractor.

1. **ALUMINUM SIGN PANEL FRAME**
   Fabricated aluminum channel internal structure to engineer's specification. Frame to be set inside perimeter of sign sleeve

2. **SIGN PANEL**
   MATERIAL: .080 gauge aluminum
   FABRICATION PROCESS: router cut
   EDGES: routed, finished smooth
   GRAPHICS: vinyl
   ICONS / TEXT: retroreflective vinyl
   COATING: UV protection
   FASTENER:

3. **CONCRETE FOOTING**
   Concrete footing to engineer's specifications
   Conceal hold down bolts within sign structure

4. **MAP PANEL**
   MATERIAL: .080 gauge aluminum
   GRAPHICS: ImageLOC printing or owner-approved equal

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Trailhead Kiosk
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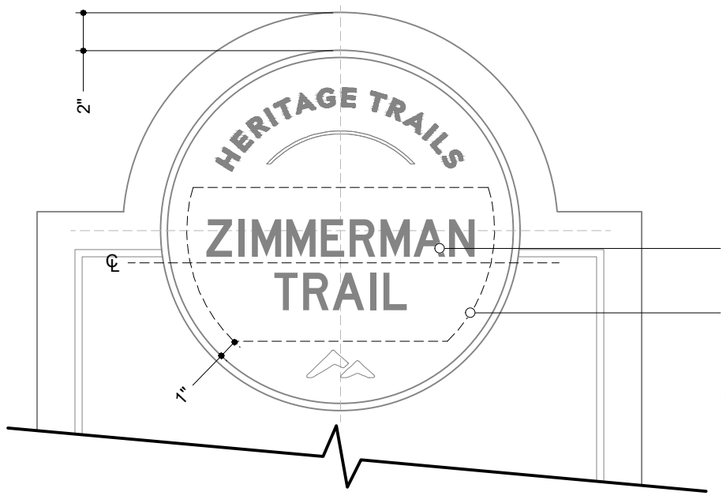
20
SHEET NUMBER



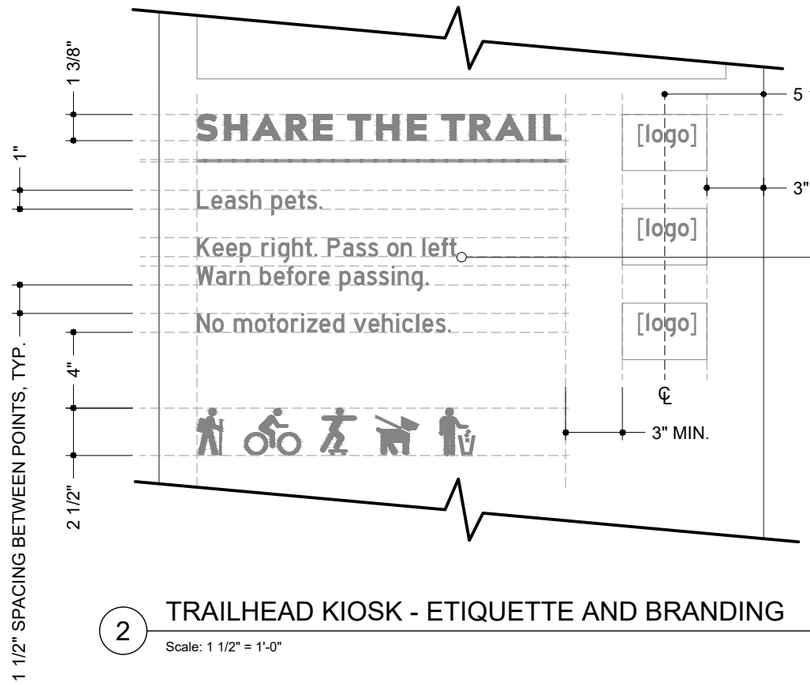
2" TEXT; HIGHWAY GOTHIC, CENTER JUSTIFIED

VERTICALLY ALIGN TRAIL NAME COPY TO CENTER OF THIS AREA; COPY NOT TO EXCEED THIS BOUNDARY

! All attachment details to be verified and engineered by contractor.

1 TRAILHEAD KIOSK - TRAIL NAME

Scale: 1 1/2" = 1'-0"



1" TEXT; HIGHWAY GOTHIC, LEFT JUSTIFIED

LOGOS

SIZE: APROX. 3" x 4.5"
COLOR: WHITE
QUANTITY: VARIES, SEE SIGN SCHEDULE; FOUR (4) MAX.
POSITION: LOGO GROUP CENTERED ON CENTERLINE AS SHOWN

2 TRAILHEAD KIOSK - ETIQUETTE AND BRANDING

Scale: 1 1/2" = 1'-0"

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Trailhead Kiosk Detail
SHEET TITLE

21
SHEET NUMBER